IMPERIAL GAZETTEER OF INDIA

PROVINCIAL SERIES

UNITED PROVINCES OF AGRA AND OUDH

VOL. I

THE PROVINCES; RIVERS, MOUNTAINS, LAKES, CANALS, AND HISTORIC AREAS; THE MEERUT, AGRA, AND BAREILLY DIVISIONS

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PREFACE

THE articles contained in these volumes were compiled, for the most part, by Mr. R. Burn, I.C.S., from materials that had been prepared for the revision of District Gazetteers. The whole is therefore largely based on the labours of the District and Settlement officers, who collected the information required, and also rendered valuable assistance by examining the articles on Districts, *tahsīls*, and towns. Special thanks are due to the late Mr. J. Hooper, C.S.I., and to Messrs. W. H. Moreland, C.I.E., S. H. Butler, C.I.E., and H. R. Nevill, I.C.S., who contributed portions of the Provincial article, or made useful criticisms. Other acknowledgements will be found attached to various articles.

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PROVINCIAL GAZETTEERS OF INDIA

UNITED PROVINCES

VOLUME I

United Provinces of Agra and Oudh.—The area administered by the Lieutenant-Governor of Agra and Oudh lies between 23° 52′ and 31° 18′ N. and 77° 3′ and 84° 39′ E. The Provinces are bounded on the north by Tibet, and on the north-east by Nepāl; on the east and south-east by the Champāran, Sāran, Shāhābād, and Palāmau Districts of Bengal; on the south by two of the Chotā Nāgpur States in the Central Provinces, Rewah and some small States in the Central India Agency, and Saugor District in the Central Provinces; on the west by the States of Gwalior, Dholpur, and Bharatpur, the Districts of Gurgaon, Delhi, Karnāl, and Ambāla in the Punjab, and the Punjab States of Sirmūr and Jubbal. The Jumna river forms part of the western boundary, the Ganges part of the southern, and the Gandak part of the eastern; other boundaries are artificial. Physical aspects. Situation and boundaries.

According to the District surveys the areas of the two Provinces are, in square miles: Agra, 83,198; Oudh, 23,966; total, 107,164. Including some river-beds which form District boundaries and are excluded from the District details, the total area amounts to 107,494 square miles. The area of the two Native States in the Provinces (Rāmpur and Tehrī) is 5,079 square miles more. Dimensions.

A Presidency of Agra was first formed in 1834, up to which date the area then separated had been included in the Presidency of Bengal, being sometimes called the Western Provinces. In 1836 its name was changed to the Lieutenant-Governorship of the North-Western Provinces. The Province of Oudh[1] was annexed in 1856, and became a Chief Com- Origin of name. Oudh.

[1] Awadh is a corruption of Ajodhyā, and was the name of a Province before British rule.

missionership with a separate administration. In 1877 the two Provinces were brought together under the Lieutenant-Governor of the North-Western Provinces and Chief Commissioner of Oudh, and in 1902 the name of the Provinces was changed and the title of Chief Commissioner dropped.

Natural divisions.

The United Provinces include four distinct tracts of country: namely, portions of the Himalāyas, the sub-Himālayan tracts, the great Gangetic plain, and portions of the hill systems of Central India.

Himā-layas.

The Himālayan tract, which lies on the extreme north, comprises the Districts of Garhwāl, Almorā, Dehra Dūn, and Nainī Tāl (in part), with the Native State of Tehrī, its area being nearly 19,000 square miles. The outer ranges of hills rise quickly from the submontane tracts to a height of 7,000 or 8,000 feet, and on these are situated the hill stations of Nainī Tāl and Mussoorie, and several small cantonments. A little farther in the interior is a second range, after passing which the elevation increases till heights of 10,000 and 11,000 feet are attained. Beyond, but still south of the great central axis of the Himālayas, tower the huge peaks of Trisūl or the 'trident' mountain (23,382 feet); Nandā Devī (25,661 feet), the highest mountain in British dominions; and Nandā Kot (22,538 feet). On the west Dehra Dūn District lies partly between the Himālayas and the Siwāliks for 45 miles, extending up the slopes of both ranges. These mountainous regions, which nowhere assume the comparative level of a plateau, include some of the wildest and most magnificent country in the whole range of the Himālayas, and among their snow-clad peaks the sacred streams of the Ganges and Jumna take their rise. Many famous temples and places of pilgrimages line the upper course of the Ganges, and thousands of pious Hindus from all parts of India annually visit the holy source.

Sub-Himā-layas.

The submontane tract between the Ganges and the Sārdā river has three distinct portions. Immediately below the hills lies a strip of land, 20 miles wide in the west and gradually becoming narrower in the east, called the Bhābar[1], into which the torrents rushing down from the steep slopes sink and are lost, except during the rainy season, beneath a mass of boulders and gravel. Wells are almost unknown, and cultivation is carried on by means of small canals. A large portion of the Bhābar is covered with forests, the home of tigers and wild

[1] The word means 'porous.'

elephants, while other game abounds. Below the Bhābar is a wider strip of land called the Tarai, a damp and marshy tract, covered for the most part with thick jungle and tall grass. In both the Tarai and the Bhābar the population is largely migratory, cultivators coming in from the adjacent Districts in the plains to the Tarai, and from the hills to the Bhābar, and departing after cutting their crops. Only the Thārus and allied tribes, who seem fever-proof, can stand the pestilential climate of the Tarai throughout the year.

Other Districts in the plains partake of the nature of the Tarai, especially in their northern portions. The rainfall is heavy and streams are numerous, while the water-level is high. Sahāranpur lies below the Siwāliks; while Bijnor, the Rāmpur State, Bareilly, and Pīlībhīt border on the Tarai, and Kherī, Bahraich, Gondā, Bastī, and Gorakhpur run up to the Nepāl frontier. The whole of this tract is a sloping plain, lying practically free from the Himālayan system, though low hills are found to the north of Bahraich and Gondā. The area of these submontane Districts is about 24,000 square miles.

Gangetic plain.

Rather more than half the total area of the Provinces (53,776 square miles) is included in the great Indo-Gangetic plain. The western portion comprises thirteen Districts: Muzaffarnagar, Meerut, Bulandshahr, Alīgarh, Muttra, Agra, Farrukhābād, Mainpurī, Etāwah, Etah, Budaun, Morādābād, and Shāhjahānpur. Most of these are situated entirely in the Doāb, or space between the two rivers Ganges and Jumna; but Muttra, Agra, and Etāwah also extend to the south and west of the Jumna, and the last three lie north and east of the Ganges. With the exception of Muttra and Agra, these Districts form a gently sloping plain of alluvial soil, in which neither rock nor stone approaches the surface, though beds of *kankar* (nodular limestone) are found. In the west of Muttra and Agra low stone ridges and hillocks form a feature of the landscape. This portion of the Provinces is by far the most prosperous. Ten of the thirteen Districts are protected by canals, and the standard of comfort is distinctly higher than elsewhere. In the centre of the great plain lie the Districts of Cawnpore, Fatehpur, and Allahābād, with nine of the Oudh Districts: namely, Lucknow, Unao, Rāe Barelī, Sītāpur, Hardoī, Fyzābād, Sultānpur, Partābgarh, and Bāra Bankī. The Oudh Districts all lie between the Ganges and the Gogra, while Cawnpore, Fatehpur, and part of Allahābād are in the Doāb.

Allahābād also extends north of the Ganges and south of the Jumna. There are no canals in Oudh, but parts of the other three Districts are irrigated by these works. The tract is generally fertile, and closely cultivated. The eastern portion of the great plain includes Balliā, Jaunpur, Azamgarh, Benares, and Ghāzīpur, all lying between the Gogra and the Ganges, the last two Districts extending also south of the Ganges. The rainfall is heavier than in the central and western portions, and the population denser.

Central India plateau.

On the south-west and south lie two small tracts belonging to natural divisions of India which differ considerably from the main portions of the Provinces. The four Districts of Jālaun, Bāndā, Hamīrpur, and Jhānsi, with a total area of 10,400 square miles, form part of the Central Indian plateau, and are generally known as British Bundelkhand. They are situated on and below the eastern slopes of the great plateau, with a gradual fall from south-west to north-east. The tract is broken up, especially in the south, by low rocky hills, spurs of the Vindhya mountains, covered with stunted trees and jungle. The soil is largely rocky and infertile, with considerable patches of the richer type known as 'black soil,' which differs entirely from the alluvium of the great plain. The spring-level is low, and there is little canal irrigation. The tract is peculiarly liable to suffer from either an excess or a deficiency of rainfall, and as a whole ranks as the poorest and most backward portion of the Provinces.

East Sātpurās.

Mirzāpur, the largest District in the plains, extends from north of the Ganges to the East Sātpurās. Of a total area of 5,200 square miles, 600 belong to the great plain; 1,700 to 1,800 form the central table-land which stretches from the summit of the Vindhyan scarp 30 miles or more to the Kaimur range and the valley of the Son; and the remainder includes the wilderness of hill and valley, jungle and forest, ravine and crag, with here and there hill-encircled alluvial basins, which makes up South Mirzāpur.

Hill system.

The most important mountains situated in the Provinces are the Himālayas, which have been already referred to. Running parallel to the outer ranges, at an average distance of 15 miles, is the chain of hills known as the Siwāliks, which forms the south-western boundary of Dehra Dūn District, and has a total length in these Provinces from the Ganges to the Jumna of about 40 miles. East of the Ganges a similar elevation can be traced in part of the Provinces, but its height is insignificant. The northern slope, which reaches 3,500 feet at the highest,

leads gently down into the valley of the Dūn which separates these hills from the Himālayas, but on the south a steep and bold escarpment falls abruptly towards Sahāranpur. The principal pass is that called Mohan, over which the main road runs from Sahāranpur to Dehra Dūn; but its importance has been much diminished since the opening of the Hardwār-Dehra Railway in 1900. The outlying spurs of the Arāvallis in Agra and Muttra are mere hillocks, though in the latter District great religious sanctity attaches to them. The three ranges of the Vindhyan system in Bundelkhand are known as the Bindhāchal, the Pannā, and the Bandair hills; but the highest point is only 1,300 feet, in Bāndā District. The East Sātpurās in Mirzāpur are geologically distinct from the Vindhyas, and form a more rugged mass, with less frequent intervals of level ground.

River system.

The drainage of the whole area ultimately falls into the GANGES, which divides the Provinces into two parts, that on the east and north being roughly double the portion lying on the west and south. The western side consists of two tracts, the DOĀB, between the Ganges and the Jumna, and the tract south-west of the Jumna. In the northern Doāb much of the drainage of the Siwāliks and the plain below passes through the HINDAN into the Jumna. Lower down the more considerable streams join the Ganges. The Jumna, however, receives on its right bank the large river Chambal, draining part of Central India and Rājputāna, and the drainage from the northern slope of the Vindhyas through Bundelkhand. East of the Ganges there are three main systems, the RĀMGANGĀ, GUMTĪ, and GOGRA, the first and last of which rise in the Himālayas, while the Gumtī starts in the Tarai between them. The characteristic feature of each of these three rivers is that the greater part of the water carried off by them is received on the left or northern banks. The GREAT GANDAK just touches the eastern boundary of the Provinces, but is not an important part of the river system.

Ganges.

The GANGES rises in the Tehrī State, under the name of Bhāgīrathi, and its junction with the Gogra is the most easterly point in the Provinces. It is a considerable river even at Hardwār, where the UPPER GANGES Canal starts, and it is tapped again at Naraura for the LOWER GANGES Canal. It is the source of the water-supply of the large cities of Meerut (by a canal), Cawnpore, and Benares. Its chief tributaries are the Rāmgangā (Farrukhābād), Jumna and Tons (Allahābād), Gumtī (Ghāzīpur), Chhotī Sarjū or Tons, and Gogra (Balliā),

besides many smaller affluents. The principal towns on and near its banks are Srīnagar (on the Alaknandā affluent), Hardwār, Garhmuktesar, Anūpshahr, Soron, Farrukhābād, Kanauj, Bithūr, Cawnpore, Dalmau, Mānikpur, Karā, Allahābād, Sirsā, Mirzāpur, Chunār, Benares, Ghāzīpur, and Balliā. Before the construction of roads the Ganges was the chief route for goods and passengers between Bengal and Upper India, and for more than thirty years after the completion of the grand trunk road it continued to be the principal through-trade route. The opening of railways has altered this; but timber and bamboos are still floated down the upper part of the course, and stone, grain, and sugar are exported to Bengal. Rice is largely imported from Bengal by river, and other grain, manufactured goods, and metals are brought in the same way.

Jumna. The JUMNA likewise rises in Tehrī, west of the lofty mountain Bandarpūnch, in 30° 1′ N. and 78° 27′ E. At its junction with the large river Tons it emerges from the Himālayas into the Dūn, and piercing the Siwāliks enters the western plain at Faizābād, near which place it is tapped by the EASTERN and WESTERN JUMNA Canals. It forms the western boundary between these Provinces and the Punjab as far as Muttra District, giving off a third canal 10 miles below Delhi at Okhla. After traversing Muttra, Agra, and Etāwah Districts, it forms the boundary between the three northern Districts of the Allahābād Division (Cawnpore, Fatehpur, and Allahābād) and the Jālaun, Hamīrpur, and Bāndā Districts of Bundelkhand. It then flows across Allahābād District to its junction with the Ganges, 860 miles from its source. The principal tributaries are the Tons (Dehra Dūn), Hindan (Bulandshahr), Chambal (Etāwah), Betwā (Hamīrpur), and Ken (Bāndā). On or near its banks are the towns of Bāghpat, Brindāban, Muttra, Mahāban, Agra, Fīrozābād, Batesar, Etāwah, Kālpī, Hamīrpur, and Allahābād. The Jumna carries a smaller volume of water than the Ganges, though its course to the point of junction is longer, and differs from it in character, being usually confined within high, well-defined banks, while the Ganges rolls from side to side of a wide bed often five or six miles in breadth during floods. Its water is the source of supply for the towns of Agra and Allahābād, and has been found to possess, when fresh, special virtue in destroying the enteric microbe.

Gogra. The GOGRA, or Ghāgrā, the great river of Oudh, vies with the Ganges in volume, while it surpasses it in velocity. Its main constituent is the Kauriāla, which rises in the upper ranges

of the Himālayas, and after passing through Nepāl sweeps down on the plains in a series of rapids over immense boulders. Almost immediately after it debouches on the Tarai the stream splits in two, the western branch retaining the name of Kauriāla, though the eastern, known as the Girwā, has a larger volume of water. The two branches reunite shortly after entering British territory in Bahraich District, and form the boundary between Bahraich and Kherī. At Bahrāmghāt the stream, which has been joined by other tributaries, assumes the name of Gogra (though this is sometimes applied at Mallānpur higher up); and from here it divides Gondā, Bastī, and Gorakhpur from Bāra Bankī, Fyzābād, Azamgarh, and Balliā, and then forms the boundary between these Provinces and Bengal as far as its junction with the Ganges. Its principal tributary is the large river, also coming from the higher Himālayas, which is known in its earlier course as the Kālī and Sārdā, and emerges from the hills at Barmdeo in Almorā. The point of junction has varied considerably within the last hundred years; but the channel which now brings down the main stream is the Dahāwar, which joins the Kauriāla at Mallānpur. The main stream of the Sarjū joins the Gogra in Bahraich District, and the Muchaura and Rāptī in Gorakhpur. Fyzābād and Ajodhyā are the two largest towns on its banks; Tāndā and Barhaj are also situated on or near it.

The GUMTĪ rises in Pīlībhīt, and its valley is scooped out almost in the middle of the plain between the Ganges and the Gogra. After flowing south-east through Shāhjahānpur and Kherī Districts, where it becomes navigable, it forms the boundary between Sītāpur and Hardoī. Entering Lucknow District, it passes the city. Its winding course flows through the Districts of Bāra Bankī, Sultānpur, and Jaunpur, and then it joins the Ganges on the borders of Benares and Ghāzīpur. The Sai, its largest tributary, joins it in Jaunpur District. The Kalyāni, Kathnā, and Sarāyān are smaller affluents. The traffic on the Gumtī has been reduced since the opening of the Oudh and Rohilkhand Railway; but grain, fuel, and thatching grass are still carried. From time to time disastrous floods are caused by heavy rain when the river is full. Gumtī.

The Rāmgangā rises in the Outer Himālayas and enters the plains in Bijnor District, whence it crosses Morādābād, the Rāmpur State, Bareilly, Shāhjahānpur, Farrukhābād, and Hardoī, reaching the Ganges, nearly opposite Kanauj, after a total course of about 370 miles. Morādābād is the principal town on its banks; but its bed changes frequently throughout Rāmgangā.

its whole course in the plains, and for some years, up to 1871, it flowed close to Bareilly.

Scenery. The greater part of the Provinces consists of a level plain, the monotony of which is broken only by the numerous village sites and groves of dark-olive mango-trees which meet the eye in every direction. The great plain is, however, highly cultivated, and the fields are never bare except during the hot months, after the spring harvest has been gathered, and before the rainy season has sufficiently advanced for the autumn crops to have appeared above the ground. The country-side then puts on its most desolate appearance; even the grass withers, and hardly a green thing is visible except a few patches of garden crops near village sites, and the carefully watered fields of sugar-cane. At this time the *dhāk* trees (*Butea frondosa*) burst forth with brilliant scarlet flowers—a striking contrast to their dusty surroundings. With the breaking of the monsoon in the middle or end of June the scene changes as if by magic; the turf is renewed, and tall grasses begin to shoot in the small patches of jungle. Even the salt *ūsar* plains put on a green mantle, which lasts for a very short time after the close of the rains. A month later the autumn crops—rice, the millets, and maize—have begun to clothe the naked fields. These continue in the ground till late in the year, and are succeeded by the spring crops—wheat, barley, and gram. In March they ripen and the great plain is then a rolling sea of golden corn, in which appear islands of trees and villages, but no hedges. North of the Provinces the Himālayas rise with their outer face and flanks clothed in dense forest. The inner ranges form a tangled mass of ridges towering higher and higher till the lofty snowy peaks are seen. In the south and south-west the level of the plain is broken by the low but precipitous scarp of the Vindhyas, and the isolated hills which stand out beyond.

Lakes. In the Outer Himālayas are found several mountain lakes, known as Nainī, Bhīm, Naukuchhiyā, Malwā, and Sāt, with the affix *tāl* or 'lake.' They are more remarkable for their beautiful scenery than for their size. The first four vary from 110 to 120 acres in area, while the last is a series of seven basins (*sāt* = 'seven'), two of which are now dry. In September, 1893, a landslip took place at GOHNĀ in the interior of Garhwāl District, when the side of a mountain 9,000 feet above the sea fell into the Birahī Gangā, the bed of which is 4,000 feet below the summit of the mountain. A dam was formed 900 feet high, 2,000 feet across the top, and 11,000 feet long. The

dam burst in August, 1894, and the level fell by about 390 feet, leaving a permanent lake 3,900 yards long with an average breadth of 400 yards and a depth near the dam of 300 feet.

In the Doāb, in Oudh, and still more in the Gorakhpur and Benares Divisions, *jhīls* or marshy lakes abound, most of which shrink to small dimensions in the hot season. Thus the Surahā Tāl in Balliā covers an area of 8,500 acres when full, but dwindles to 2,800 acres in the hot season. The Bakhira Tāl in Bastī, 5 miles long and 2 broad, is seldom more than 4 or 5 feet deep. Another large swamp is at Sāndī in Hardoī, while the Behtī lake in Partābgarh has been drained and its site is now cultivated land. In Bundelkhand and Mirzāpur there are artificial reservoirs of water, formed by embanking the mouths of valleys, most of them monuments of a former time. The principal lakes in Bundelkhand are in charge of the Irrigation Department.

Geology. Tibetan zone.

The Provinces may be divided geologically into a succession of zones lying north-west to south-east. North-east of the central axis of snowy peaks, and stretching up to and into Tibet, is a vast sequence of sedimentary strata lying in a great elevated basin. The series begins with unfossiliferous slates, quartzites, and occasional conglomerates of very ancient aspect, called Haimantas, which are at the base of everything, and are probably identical with the slate series found south of the great axis. These pass up into, and are overlaid by, thin-bedded dark-grey coral limestones, followed by flesh-coloured quartzite, and more coral limestone, shales, grey and crinoid limestones, which are probably of Silurian age, and capped by a massive white quartzite. The total thickness is about 2,300 feet. Above this Pre-Permian group is a layer of black crumbling shales of Upper Permian age, and there is thus a physical and palaeontological break here between the Upper Silurian and Upper Permian. After about 130 feet, these black shales pass into the Trias, which is the most characteristic series of this part of the world. It averages 2,000 feet in thickness, consisting of dark shales and limestone beds, with a quartzite stage near the top. The series is prolific in characteristic fossil zones. About 2,000 feet of massive well-bedded limestone, mostly unfossiliferous, follow above the Trias, the so-called Dachsteinkalk in part, which represents the Lower and Middle Jurassic.[1] Above that, again, come the characteristic dark Spiti shales, over 1,000 feet thick, with concretionary bands, contain-

[1] Condensed from notes by C. S. Middlemiss and E. Vredenburg, Geological Survey of India.

ing a fine Upper Jurassic fauna, not yet described in detail. These pass in this part into great thicknesses of dark Giumal sandstone of presumably neocomian age (Lower Cretaceous). The regular sequence is now broken, along the watershed, by a great horizontal thrust plane, bringing in exotic masses of older limestones and shales set in basic volcanic rock. They chiefly build up the lofty jagged summits from Bālchadhurā (18,110 feet) and Ghatamenin (18,700) to Kungrībingrī (19,170), and lie upon Giumal sandstone or Spiti shales. Although they show magnificent suites of marine fossils, ranging from Permian or Permo-Carboniferous to Upper Jurassic, the form of the rock, and the fossils it contains, differ from the same section lower down, and these masses have probably come from the north.

Central axis.

The snowy range containing all the loftier peaks is built up of immense sills of massive gneissic rock, much of which is probably very ancient. With the gneissose granite is associated a large quantity of thin-bedded micaceous, garnetiferous, and other crystalline schists.

Lower Himālayan zone.

The large area from the snowy range to the outer edge of the Himālayas has not been fully examined. The most general feature is the gradual passage from the flatly dipping foliated schists with sills of gneissose granite to steeply dipping slates, slaty shales, and quartzite, with occasional thin bands of dark limestone and here and there volcanic breccia. All are unfossiliferous, and must be presumed to be at least as old as Pre-Cambrian. Here and there laccolites and sills of gneissose granite reappear, with much the same composition as, but isolated from, the central chain. Massive limestone and dolomite formations are found at many places, especially along the southern edge. They are of varying but considerable thickness, always unfossiliferous, always in narrow bands among the slates. The Lower Himālayas are remarkable for their steep-sided ravines and frequent convex slopes, due to constant undermining by swollen rivers. Landslips are, as a consequence, not uncommon. In some cases, these calcareous formations are overlaid by an imperfectly fossiliferous series of dark sandy limestone, probably of mesozoic age. These in turn frequently underlie thin dark shales and calcareous shales. It is generally in rocks of these younger sub-zones that the ores of copper, lead, and iron in Kumaun are worked, but with only a small measure of success.

Sub-Himālayan zone.

The sub-Himālayan zone of younger Tertiary strata is well defined and sharply separated from the Outer Himālayas by

a continuous reversed fault, and is 6 to 14 miles in width, except near the Dehra Dūn, where it is wider. The whole of these Tertiary strata are fresh-water deposits, and are of immense thickness, comprising three stages: the Upper Siwālik conglomerates, sands, and clays; the Middle Siwālik sand rock; and Lower Siwālik Nāhan sandstone. The system is celebrated for having yielded the magnificent (chiefly mammalian) Siwālik fauna. Most of these fossil remains have been gathered from the middle and upper rock stages. They comprise thirty-nine genera and seventy-one species of mammalia which exist at the present day, and twenty-five genera and thirty-seven species now extinct. Gypsum is found in the Nihāl Nadī, below Nainī Tāl; gold is washed in very small quantities in the Sonā Nadī; and iron was formerly worked from clays in the Nāhan sandstones, near Dechaurī and Kālādhungī in Nainī Tāl District.

The Gangetic alluvium is still being carried down from the Himālayas and deposited by the Ganges and its affluents. It is 90 to 300 miles in width and extends to unknown depths near the foot of the hills, where its floor is probably still sinking. On the south it overlaps the ancient rocks of peninsular India, and is much thinner. A well-boring was made at Lucknow from a surface 370 feet above sea-level to a depth of 1,336 feet without reaching the bottom of the Ganges basin. At Agra solid rock was met at 481 feet from a surface-level of 553 feet above the sea. The Bhābar gravel or torrent-boulder zone reaches a height of about 1,000 feet. Below the Bhābar comes the great alluvial plain of clays and sands, broken only by the wide river valleys, which are from 50 to 200 feet lower in level, and have the distinctive names of *khādar*, *katrī*, *kachhār* or *deāra*, as opposed to *bāngar*. In the drier parts of the great plain the fertility of the soil is impaired by a surface efflorescence called *reh*. This consists of carbonate and sulphate of soda, often mixed with common salt. Land covered with these salts, or barren from any other cause, is called *ūsar*, and includes about 2,000,000 acres. Gangetic alluvium.

In the south-west of the Provinces the Vindhyan rocks emerge from the alluvium in Mirzāpur, Allahābād, Bāndā, Hamīrpur, and Jhānsi Districts. The system is primarily distinguished by its series of three massive scarps of sandstone, each representing a different subdivision; but only two of these are found in the United Provinces. The northernmost or Kaimur sandstone, which forms the Bindhāchal range, is deeply scored by river valleys. The celebrated forts of Chunār Vindhyan system.

and Kālinjar stand on detached masses of this range. Farther south the lower and upper Rewah sandstones occur in the Pannā range. Both of these formations are found throughout the southern portion of the Districts named above. In Mirzāpur the jungle series of red shale, Bijāwar slates, quartzites and haematitic jaspers and Archaean gneiss lie below them, and the Gondwāna shales, sandstones, and boulder-beds above them. Coal is found in the latter, and was formerly worked. In Jhānsi and Hamīrpur the gneiss is more prominent; but the Bijāwar series occupies a strip of land about 17 miles westward from the Dhasān river, containing rich haematitic ore in places, with a cupriferous vein in one locality. The outer fringe of the great spread of basalt constituting the Mālwā trap just reaches the south of the Lalitpur *tahsīl* in Jhānsi. In Agra District the Vindhyan sandstones again appear, and farther north in Muttra are a few ridges of ancient quartzites.

Botany[1]. Elements.

The flora of British India has been divided into five distinct elements[2]. The oldest, called the Indo-African, extends from the Deccan to the Gangetic plain and to the drier parts of the Himālayas. Thus the flora of North Africa and Arabia is represented by *Peganum*, *Fagonia*, *Balanites*, *Acacia arabica*, *Alhagi*, *Grangea*, *Salvadora*, &c.; and that of tropical Africa by species of *Grewia*, *Sida*, *Corchorus*, *Triumfetta*, *Indigofera*, *Gloriosa*, and many others. The Eastern element, belonging to the Peninsula from Singapore to Assam, is represented along the base of the Himālayas from Gorakhpur to the Jumna. The genera *Astragalus*, *Artemisia*, *Pedicularis*, and *Corydalis*, with many *Boragineae* and *Umbelliferae*, are characteristic of the Central Asian element, found chiefly at high elevations, but sometimes extending to lower levels on the western drier ranges. The European element appears to have entered at the western end of the Himālayas, not long after the southward extension of the Central Asian element, and to have spread eastward in both hills and plains. The Quaternary element occupies the cultivated tracts and accompanies man.

Gangetic plain.

Throughout the great plain vegetation is on the whole uniform, differences being chiefly due to variation in rainfall and temperature. In the west, where the rainfall is under 30 inches, vegetation becomes scanty, the trees and shrubs are mostly thorny, and plants characteristic of desert regions are found, such as *Alhagi*, *Capparis*, *Prosopis spicigera*, *Fagonia*,

[1] Condensed from an account by J. F. Duthie, lately Superintendent, Botanical Survey of Northern India.

[2] C. B. Clarke in *Journ. Linn. Soc.*, vol. xxxv (1898).

Tecoma undulata, *Salvadora persica*, *Salsola*, and species of *Grewia*, *Sida*, and *Acacia*. Some of these extend eastwards in sandy waste ground. Two well-marked features are observed in the annual herbaceous species. Those appearing in the cold season on waste ground, or as weeds in cultivation, are mostly of European origin and are more abundant in the wheat-growing Districts of the north-west; while the annual herbage which springs up in the rains is composed mainly of species which have come from the east or from Central or Southern India. The sandy riverain tracts produce coarse grasses and deep-rooted perennials, with prickly shrubs and other desert plants. In the ravines the scanty vegetation consists mainly of stunted trees and shrubs and perennial plants, many of which belong to the African and Arabian type. In *ūsar* the land produces no vegetation where *reh* is very abundant, but elsewhere *Sporobolus arabicus* or *pallidus* and *Chloris virgata* are found, which will not thrive except on saline soil. The natural orders most represented in the Upper Gangetic plain are: *Leguminosae*, *Gramineae*, *Compositae*, and *Cyperaceae*. Only two palms are found wild, namely, *Phoenix sylvestris* and *P. acaulis*.

The tropical zone extends up to about 5,000 feet above the sea, and is eminently a forest[1] tract forming part of the great belt which includes the Bhābar. In the west, the vegetation of the Dūn valley between the Siwāliks and Himālayas is particularly luxuriant. Orchids are plentiful along the base of the Himālayas, and about sixty-two species representing twenty-five genera have been identified. The aspect of the vegetation changes as the slopes rise; and at 4,000 feet *Engelhardtia*, *Rhus*, *Pistacia*, *Cornus*, *Rosa*, *Clematis*, *Bauhinia retusa*, and *Albizzia mollis* (pink *siris*) are met with, followed by the *banj* oak tree, rhododendron, and *Pieris ovalifolia*. The forests are more scattered on the southern slopes, while the northern declivities are covered with dense growths. The temperate zone reaches to about 12,000 feet, which is the average limit of forests; and here European genera increase, such as *Clematis*, *Berberis*, *Ilex*, *Rhamnus*, *Vitis*, *Acer*, *Rubus*, *Rosa*, *Cotoneaster*, *Viburnum*, *Lonicera*, *Rhododendron* (*arboreum* and *campanulatum*), *Quercus* (*incana*, *dilatata*, *lanuginosa*, *annulata*, and *semecarpifolia*), *Pinus* (*longifolia* and *excelsa*), and *Arundinaria* (ringals). The epiphytic ferns (*Davallia*, *Polypodium*, &c.) drape the trees during the rains, turning brown and shrivelling when the monsoon ceases. At about 12,000 feet the high-level forests begin to thin off into thickets of birch and willow, mixed

Himālayas.

[1] For details see section on Forests.

with dwarf rhododendron and other shrubby plants, until the open pasture land is reached, which is richly bedizened in the summer months with brilliantly coloured alpine species. *Ranunculaceae*, *Cruciferae*, *Leguminosae*, *Rosaceae*, *Saxifragaceae*, *Crassulaceae*, *Umbelliferae*, *Caprifoliaceae*, *Compositae*, *Campanulaceae*, *Primulaceae*, *Gentianaceae*, *Scrophularineae*, *Labiatae*, *Polygonaceae*, *Salicineae*, and *Gramineae* are the natural orders most largely represented. *Saxifraga*, *Sedum*, and *Saussurea* have been found up to 17,000 feet.

East Sātpurās and Central India plateau.

In the hilly portions of Mirzāpur many Central and Southern Indian species reach their northern limits, such as *Hardwickia binata* and *Soymida febrifuga*. The flora of Bundelkhand is similar in many respects to that of South Mirzāpur, but the drier climate encourages the growth of desert plants. *Ailantus excelsa*, *Anogeissus pendula*, and the teak-tree do not grow wild north of Bundelkhand.

Wild animals.

Elephants are still found in the Siwāliks and in the Bhābar, and every few years they are noosed by men riding tame elephants. Tigers are fairly common in the forests of the Siwāliks, the sub-Himālayan tracts, and Mirzāpur District, and are also found in the south of Allahābād, Bāndā, and Jhānsi. Leopards are still more widely distributed, and the snow leopard is found in the Himālayas. Within the last few years a rhinoceros has been shot in Gorakhpur District, and wild buffaloes are sometimes met with there. Wolves, jackals, and hyenas are found nearly everywhere, and the first-named are not infrequently the cause of death to human beings. In the Siwāliks, Almorā District, parts of Northern Oudh, Mirzāpur, Bāndā, and the Lalitpur subdivision of Jhānsi wild dogs (*Cyon dukhunensis*) are occasionally met with. Antelope, *nīlgai* (*Boselaphus tragocamelus*), and wild hog abound in many parts of the open plains. *Sāmbar* (*Cervus unicolor*), *kākar* or barking-deer (*Cervulus muntjac*), the four-horned antelope (*Tetracerus quadricornis*), and *chītal* or spotted deer (*Cervus axis*), are to be found in the forests; while the swamp deer, or *gond* (*Cervus duvauceli*), and *pārha*, or hog deer (*Cervus porcinus*), live near swamps, and the *chinkāra* (*Gazella bennetti*) haunts the jungly ravines on the banks of the larger rivers. Musk deer (*Moschus moschiferus*), *thār* (*Hemitragus jemlaicus*), *gural* (*Cemas goral*), and other species of wild goats, sheep, and goat-like antelopes are found in the Himālayas. In the hills of Kumaun and in Mirzāpur and Bundelkhand black bears (*Ursus torquatus* in the Himālayas and *Melursus ursinus* elsewhere) are fairly common, while the Isabelline bear has been observed near the

snows. Many varieties of duck and geese visit the Provinces in the cold season and a few breed here. Snipe, quail, black and grey partridge, sand-grouse, bustard, plover, florican, and jungle-fowl are the commonest game birds, while woodcock, *chikor*, and pheasants are found in the hills, and the sacred peacock in most parts of the plains. Snakes are common everywhere, and immense pythons are met with at the foot of the outer ranges of the Himālayas and in Bundelkhand. Cobras and *karaits* (*Bungarus caeruleus*) cause considerable loss of human life, and also kill cattle.

Climate and seasons[1]. The year may be divided into three distinct seasons. The cold season, commencing shortly after the withdrawal of the south-west monsoon, begins at the end of October and extends to the middle or end of March. It is characterized by bright clear weather, generally cloudless except for a few flecks of cirrus which accompany disturbances from Persia. At night frost on the ground is not infrequent during December, January, and February, but the days are pleasantly warm. Rain may fall at any time, owing to storms from Persia; but the total amount does not usually exceed two inches in the plains, and it usually falls about Christmas or early in the New Year. At the end of March the increasing heat causes a hot land-wind throughout the day, usually coming from the west with considerable force, and accompanied by violent dust-storms. In June this wind ceases, as the south-west monsoon approaches, and the rains commence in the south of the Provinces between the middle and end of June. After the first burst the weather is broken, but rainless intervals are not uncommon. In September these dry periods become more frequent and last longer, and in October the monsoon currents cease. The climate in the hills resembles closely that of the low-lying parts of Switzerland. The winter is frosty, and snow generally falls as low as 5,000 feet, while it has been recorded at 2,500 feet. The summer is warm and relaxing, except at high altitudes. In the rains there is much cloud and fog.

Temperature. The mean shade temperature in the plains varies slightly according to the position of stations: thus Agra, which is near the Rājputāna desert, is very hot in the dry season, and is also warmer than more easterly stations during the monsoon, owing to its smaller rainfall. The difference is, however, only a few degrees. In the different seasons the temperature ranges from 60° or 61° in January to 93° or 94° in May. The average maximum and minimum temperatures of the representative

[1] From a note by E. G. Hill, D.Sc., Meteorological Reporter.

places shown in the table on page 142 may be ascertained by adding or subtracting half the daily range: thus the average temperature varies from a minimum of 47° or 48° in January to a maximum of 107° in May. The highest maximum recorded was 120° at Agra on June 18, 1878; but temperatures of 115° to 116° are reached at one place or another nearly every year.

Rainfall. The monsoon rain may come from either the Bengal or the Bombay current, and the heaviest rain is frequently caused by the meeting of the currents from both directions. The fall in the plains is heaviest in the east, where it amounts to over 50 inches, and least in the north-west, where it is only 27½ inches, the humid winds discharging their moisture as they pass across the country. As they reach the submontane Districts and outer hills, cooling causes a precipitation greater than in the plains. Thus the rainfall is, in the plains: at Benares, 40 inches; at Cawnpore, 31 inches; and at Agra, 27½ inches; in the submontane Districts, at Gorakhpur, 50 inches; at Bahraich, 41 inches; at Roorkee, 42 inches; and in the Outer Himālayas, at Nainī Tāl, 102 inches; at Mussoorie, 97 inches; and at Rānīkhet beyond the outer range, only 54 inches. There is a similar decrease in the Bombay current, which gives 60 inches at Jubbulpore; 49 inches at Saugor; and only 37 inches at Jhānsi. Variations in the rainfall are common. In 1883 Jhānsi received only 15 inches or 40 per cent. of the normal, and in 1896 Allahābād received 18·3 inches (46 per cent.), Agra 9·4 inches (34 per cent.), and Cawnpore 16·6 inches (52 per cent.). On the other hand, in 1894 there was a large excess all over the Provinces. Allahābād received 76·3 inches (nearly double the normal), Dehra Dūn 123·8 inches, and Mussoorie 157·3 inches. The heaviest fall recorded for twenty-four hours in the plains is 32·4 inches at Nagīna in Bijnor District on September 18, 1880. For agricultural purposes the distribution of the fall is most important, and a premature cessation before the end of August will cause more damage than a postponement of the first fall to the middle, or even the end, of July.

Storms, floods, and cyclones. Destructive storms and cyclones are rare in these Provinces, and none of importance has been recorded. In March and April much damage to crops is often done in limited areas by hail. The worst floods occur in the valley of the Gumtī, which rose 37 feet at Jaunpur in 1871 and 27 feet in 1894, destroying 4,000 houses in the earlier year and over 1,000 in the later, but not causing much loss of life.

Earthquake shocks are occasionally felt, but are not serious. Some damage is recorded to have been caused in 1506 and in 1764, and the earthquake of 1905 destroyed a number of houses in Mussoorie and Dehra. **Earthquakes.**

History. Prehistoric remains. Stone implements have been found in large numbers in Mirzāpur, Bāndā, and Hamīrpur. A few have been dug up at ancient sites in Benares, Ghāzīpur, Bulandshahr, and Bastī. Those from Bāndā are chiefly hammer-stones of quartzite, basalt, sandstone or diorite, celts of basalt and diorite, and smaller implements made of chert. In Mirzāpur the principal classes are chert flake knives and arrows. Cup-markings on boulders have been observed in Kumaun, and children still cut them in Bundelkhand. On the walls of caves in the southern scarp of the Kaimur Hills, and on rock faces in Bāndā, Allahābād, and Mirzāpur, rude drawings in red oxide of iron have been found, which depict hunting scenes and other subjects, the most interesting being a rhinoceros hunt. In a few places inscriptions of the same kind have been noticed, which apparently belong to a period early in the Christian era. At a few localities in the Western Districts—Muttra, Bijnor, Cawnpore, and Unao—copper arrow-heads and spears are occasionally turned up.

Historical records. Histories in the European sense were rarely compiled in India before the Muhammadan conquest, and little has been done to extract satisfactory historical material from Sanskrit literature. The Vedic hymns, which were probably composed at least as early as 2000 B.C., show the Aryas still settled west of the Jumna. It has recently been suggested that the move forward commenced about 1000 B.C. The two great epics, the Mahābhārata and Rāmāyana, are of very doubtful historical value; but in these we find Aryan kingdoms established—in the former near Meerut, and in the latter at Ajodhyā. The Mahābhārata describes a contest between two related families, the Pāndavas and the Kauravas, who lived at Hastināpur, now popularly believed to have been in Meerut District. The Pāndava brothers were driven into exile for a time, and wandered in places which cannot be satisfactorily identified, but they married a daughter of the king of PANCHĀLA. Afterwards they ruled near Delhi, which they are said to have founded. Orthodox Hindus place the final struggle between these families a little before the year 3102 B.C., when the present epoch (Kali Yuga) began. European students have suggested the thirteenth or fourteenth centuries B.C., while an attempt has recently been made to fix the war about 1194 B.C.

on astronomical data. The Rāmāyana tells the story of the exile of Rāma Chandra, son of the king of Ajodhyā, who was compelled to wander away into Central India with his wife Sītā and a brother. While they dwelt in the wilds, Sītā was abducted by Rāvana, the demon-king of Ceylon, but was recovered with the help of Hanumān, lord of the monkeys. The path of the exiles is still traced by pilgrims, and the story is acted and recited every year, while Rāma and Sītā are to Hindus the perfect models of every virtue. These events are placed in an earlier epoch (Tretā Yuga) than the present; and native opinion therefore holds that the Rāmāyana was composed before the Mahābhārata, though European scholars would place it later on the evidence of style and subject. Linguistic researches have lately given rise to the opinion that the so-called Aryas came into these Provinces by different routes and at different times. Thus it seems probable that one wave passed along the foot of the Himālayas and spread southward only when it reached the east of the Provinces and Bihār, the ancient MAGADHA. Another wave passed across the Jumna and down the Doāb, the ancient MADHYA DESA or middle country.

Buddhism. The earliest events which can safely be called historical are connected with the life of Gautama Buddha. The Singhalese traditions place Gautama's death in 543 B.C., while European scholars have suggested various dates between 477 and 370 B.C. It is certain that he spent much of his life in the eastern Districts, and the remains of *stūpas*, monasteries, and other relics testify to the extent to which his doctrines were held in all parts of the Provinces as well as beyond their limits. A suggestion has recently been made that Buddhism was a regular development of religious thought among the people of Magadha, and not merely a revolt against the growth of Brāhmanism in Madhya Desa, as is commonly supposed. As a religious system it appears to have maintained its position till the fourth century A.D., when a revival of Hinduism took place under the Guptas. The accounts of the Chinese pilgrims in the fifth and seventh centuries A.D. show that Buddhism was then fast waning, and the latest memorial of it as a living faith is an inscription of the twelfth or thirteenth century found in Gondā District.

The Greeks. The first point of contact with Western history comes in the fourth century B.C., with Alexander's invasion and the subsequent relations of Seleucus Nicator with Sandrocottus, who is identified with Chandra Gupta Maurya of the Purānic annals. The Mauryan dynasty. Chandra Gupta's kingdom, the first organized empire in India

of which we have historic record, extended, after the withdrawal of Seleucus, from the Hindu Kush to the Bay of Bengal, with its capital at Patna. The grandson of Chandra Gupta was Asoka, the first great Buddhist king, whose pious edicts have been found on pillars and rocks in many parts of India. Three of his inscriptions are known in these Provinces, on pillars at ALLAHĀBĀD and BENARES, and on a rock at KĀLSĪ in Dehra Dūn. The last mentions by name the contemporary kings of Syria, Egypt, Macedonia, Cyrene, and Epirus, and thus fixes the date of Asoka's coronation at 270 or 269 B.C. These inscriptions, and the fragments which have survived from the writings of Megasthenes, the ambassador of Seleucus at the court of Patna, show a highly developed system of government. Outlying provinces were under viceroys, and there were regular grades of officials subordinate to these. The army was carefully organized. Agricultural land yielded one-fourth of its produce, besides rent, to the crown. There were roads with pillars marking the distances, and the capital city was administered by a board of thirty members.

Later dynasties.

If the chronology of the Purānas is to be accepted, the Mauryan dynasty came to an end about 188 or 178 B.C., and was succeeded by the Sunga, but there is no independent confirmation of this. Numismatic evidence points to the conclusion that about this time parts of at least four kingdoms were included in the Provinces, corresponding to the ancient SŪRASENA (round Muttra), North PANCHĀLA (Rohilkhand), KOSALA (round Ajodhyā), and a tract south of Allahābād which may have been the kingdom of Kosāmbhī. From their coins the kings of Panchāla and Muttra appear to have been Hindus, while the symbols on the coins of Ajodhyā and Kosāmbhī are often Buddhist.

Sakas and Kushans.

The Chinese chronicles describe the gradual rise in power of the Sakas or Scythians, who spread southward into India about the middle of the second century B.C.; and the coins of Muttra show that they penetrated as far as that place, for the native title of Rājā is replaced by Kshatrapa (Satrap), and names of clearly foreign origin are found. The onward movement of the Sakas had been to some extent involuntary, as they were retreating before the Yueh-chi, a horde divided into several tribes, the most important of which was called Kushan. Controversies still continue about the chronology of the period. Many dated inscriptions of the great Kushan kings Kanishka, Huvishka, and Bās Deo have been found at Muttra and elsewhere, but the era is in dispute. The latest

theory places the reigns of these kings between 125 and 225 A.D.[1] Little is known of the Kushans. Kanishka is famous in Pālī literature as a liberal patron of Buddhism. The gold coinage of the period is clearly imitated from the Roman *aureus* first introduced by Augustus; and it bears the images of many deities, such as the Sun, Moon, Buddha (rarely), and others whose identity is not clearly established. It seems probable that the Kushans were soon Hinduized. The Greek inscriptions on the coins gradually become unrecognizable, and are replaced by Indian letters.

The Guptas.

Early in the fourth century a great Hindu kingdom arose in MAGADHA or Bihār, which, like its Mauryan predecessor, spread far and wide. The third king, Chandra Gupta (I), founded a new era commencing in A.D. 320; and his son, Samudra Gupta, carved out an empire from the Sutlej on the west to Central Bengal on the east, and from Oudh on the north to Central India on the south. Nine kings of Northern India, the rulers of Eastern Bengal, twelve kings of the Deccan, and the forest tribes of Central India and Rājputāna owed him allegiance. For 150 years the kingdom held together, and the period is remarkable for a revival in Hinduism. The language of the Gupta inscriptions is Sanskrit, instead of Prākrit, which was used previously, and the subject-matter, where religious topics are concerned, deals almost exclusively with Hindu ideas. It has been suggested that the revival of Sanskrit literature dates from this period. A description of Northern India between A.D. 400 and 413 is given by the Chinese pilgrim Fa Hian. In these Provinces the people were well off, without poll tax or much official restriction, though land tax was collected. Part of Southern Oudh was forest, and the country north of the Gogra largely deserted.

White Huns and the Rājputs.

The Gupta empire appears to have been gradually falling to pieces by the end of the fifth century, decay being hastened by incursions of the Ephthalites or White Huns, another tribe of Central Asian invaders, who penetrated as far as Gwalior and Eran. Petty chiefs rose into power, and among these was a line of rulers calling themselves Maukharīs, who reigned throughout the latter part of the sixth century. The period was one of constant warfare between the Maukharīs, the Huns, the Guptas of the shrunken kingdom of Magadha, and the

[1] V. A. Smith in *J.R.A.S.*, 1903, pp. 1 et seq. An older theory, that the era began in 57 B.C., is maintained by Dr. Fleet (*J.R.A.S.*, 1906, p. 979).

rulers of Mālwā. The Maukharīs were finally crushed by Silāditya of Mālwā, but in 606 he in turn fell before the armies of Thānesar, in the Punjab, whose ruler was connected by marriage with both Maukharīs and Guptas. Harshavardhana of Thānesar became king of Kanauj, and founded an era which was used in Northern India for some time. The splendour of his reign and extent of his power are described by Hiuen Tsiang, who visited India between 629 and 645. Buddhism was fast declining, but still lingered, and was in fact regarded by the king too favourably to suit the Brāhmans, who tried to murder him. Harshavardhana invaded Western India between 633 and 640 and also conquered Nepāl, but was repulsed in an expedition to the Deccan. His appears to have been the first great kingdom of the modern Rājputs, who probably represent the Hinduized descendants of the invaders from Central Asia. Harshavardhana's empire did not last, and historical sources fail almost entirely till the latter half of the ninth century, when Raghuvansi kings were ruling at Kanauj. One of these was conquered in 917 by Indra (III) of Gujarāt, but was restored by Harsha the Chandel, whose clan was rising into importance in BUNDELKHAND. North-west of the Provinces the Tomars were gathering strength in the Punjab, though they were defeated in 988 by Sabuktagīn of Ghazni. At Kanauj Tomars succeeded Raghuvansis, and gave place to Gaharwārs.

The early Muhammadans.

The Provinces had been free from foreign invaders for about four hundred years, when in 1018 Mahmūd of Ghazni crossed the Jumna, and took Bulandshahr; the rich city of Muttra, with its temples full of jewels and gold; and Kanauj. This expedition and two more in 1021 and 1023, directed against Kanauj, Gwalior, and Kālinjar, were mere raids, in which plunder rather than conquest was the aim. Throughout Oudh traditions are numerous about the exploits of Mahmūd's general, Sālār Masūd Ghāzī, who is said to have fallen at Bahraich in 1033, fighting against Suhil Deo, Rājā of Gondā; and although the Muhammadans had got no permanent hold on the country, they left converts behind them. The Ghaznivid rulers gave place to the Ghorids, who gradually overran the Punjab. Muhammad Ghorī failed in 1191 to crush the great Prithwī Rāj of Delhi, who had extended the power of the Chauhāns as far as Southern Bundelkhand; but in the next year he was successful, and Prithwī Rāj lost his life with his kingdom. Kutb-ud-dīn, a Turkī slave, was appointed general in Hindustān, and in 1192 captured Meerut,

the first town to fall east of the Jumna. Delhi, Kālinjar, Mahobā, and Koil were then taken; and in 1194 Muhammad and his general defeated Jai Chand of Kanauj, and thus broke the last Hindu power of importance. Budaun and Ajodhyā were made the seats of local governors, who had plenty of fighting with their turbulent subjects during the next few years. Bundelkhand had not been subdued, and the first half of the twelfth century was a time of war in most parts of the Provinces. In Southern Oudh the Bhars had risen on the fall of Kanauj; but their chiefs, Dalkī and Malkī or Dal and Bal, were crushed in 1247. Things were quieter under Ghiyas-ud-dīn Balban (1265–87), who was a strict but just ruler, and kept the Provinces at peace, partly no doubt to be free in case the dreaded Mongols should appear on the north-west. The Slave dynasty of Delhi was followed by the Khiljīs; and under the second of this line, Alā-ud-dīn Muhammad, who gained the throne by murdering his uncle on the sands of the Ganges between Karā and Mānikpur in 1295, government was a stern reality. Spies were everywhere; all pensions, grants, and endowments were resumed; Hindus were heavily taxed; the land revenue amounted to half the produce; and an attempt was made to fix prices. Alā-ud-dīn conquered the Deccan and repelled the Mongols; but the harshness which kept internal peace in his lifetime was itself the cause of disruption when his strong personality was removed in 1316. Five years later his debauched son was murdered, and a pretender was beheaded after a reign of a few months. Ghiyās-ud-dīn Tughlak, first of the Turkī line, had been Alā-ud-dīn's general in the Punjab, and order was soon restored. Under his son, Muhammad bin Tughlak, a reign of terror was revived. Ghiyās-ud-dīn had reduced the land revenue to one-tenth of the gross produce; but it was now increased by new cesses to such an extent that when drought came in 1344 a famine began, which lasted for years, and depopulated the Doāb. In 1351 Fīroz Shāh (III) began a wise and beneficent rule. Taxation was reduced and yet money was available for public works. The town of Jaunpur was founded in this reign, and a large fort was built near Budaun. After the death of Fīroz in 1388 the Delhi kingdom fell to pieces. In 1394 Khwāja Jahān was made governor of Kanauj, Oudh, Karā, and Jaunpur, and assumed independence. For more than eighty years this Sharkī ('eastern') dynasty ruled from JAUNPUR over the greater part of the Provinces, and has left splendid memorials in the mosques erected at

the capital city. Tīmūr, the Mongol, took Delhi in 1398, and next year harried the present Meerut Division. The first half of the fifteenth century saw a succession of puppet rulers or usurpers at Delhi or Kanauj, while the Doāb, Rohilkhand, and Bundelkhand were the scenes of risings by the Hindus, and conflicts between the kings of Jaunpur, Delhi, and even Mālwā and Gujarāt. At the end of the period there were independent rulers at Sambhal, Koil or Jalesar, Rāprī, and Kampil or Patiālī. In 1450 or 1451 the Afghān line of Lodī was founded by Bahlol, who started vigorously on the task of crushing the petty local rulers, and breaking the more important power of Jaunpur—a task which took twenty-five years to accomplish.

The Mughals and Sūris.

Early in the sixteenth century the capital was moved from Delhi to Agra, which was to become a great city under the Mongols or Mughals, who now appeared again. In 1526 Bābar defeated the Afghān king, Ibrāhīm, at Pānīpat, but found himself in difficulties at Agra. On the west the Rājputs were united under the Rānā of Udaipur, while on the east the Afghāns were threatening an attack from Kanauj. The crown prince, Humāyūn, made a successful raid as far as Jaunpur and Ghāzīpur, and Bābar gained a great victory over the Rājputs near Fatehpur Sīkri. He was thus able to send troops east to check the Afghāns, who had taken Koil and held the central Doāb. The Mughal forces were, however, unsuccessful, and Bābar had to stop his invasion of Central India and return to their aid. He pressed on to Kanauj, and after defeating his opponents north of the Ganges marched through Oudh and returned to Agra, where he died. When Humāyūn succeeded to his father's kingdom in 1530, he found it imperfectly subjugated and difficult to rule. His first efforts were in Central India; but though he was successful there, a rival was consolidating his resources in Bihār and the east of the Provinces. This was Sher Khān Sūri, who had accepted a command from Bābar, but now aimed at independence, and refused the offer of Jaunpur. After three years' fighting he gained a complete victory over Humāyūn at Kanauj in 1540 and won the throne of Northern India, with the title of Sher Shāh. He was a great administrator, who made roads, reformed the currency, and laid the foundations of a sound revenue system. In 1545 he was fatally wounded while besieging Kālinjar, and during the next ten years the Sūri power fell to pieces. Humāyūn returned in 1555 and recovered Agra and Delhi, but died in 1556.

Akbar.

Akbar was a boy of thirteen at his father's death, and had to

conquer his kingdom before he could rule it. For two years the Punjab kept him busy, but in 1558 he came to Agra and reduced Gwalior. The next year saw the Afghāns defeated in Jaunpur and Benares, but they rebelled again in 1561, and Chunār was not taken till later. In 1565 the lords of Ajodhyā and Jaunpur revolted and took Lucknow, and in 1567 another governor of Jaunpur headed a rising. Apart from these events the Provinces had entered on a period of comparative peace and good government, which was to last for a century and a half. Akbar abolished the pilgrim and poll taxes on Hindus and many vexatious cesses. The land revenue system was still further improved, and assignments of land were examined. In the record of his great survey is found the most complete account of the country at any period before British rule, and the liberal monarch gathered round him poets, musicians, theologians, and great writers. The earliest Christian mission in Northern India was established at his invitation. Magnificent forts were built at Agra and Allahābād; and on a rocky ridge west of Agra, where the saint lived who foretold the long-desired birth of a son to the monarch, a splendid mosque and palace buildings were raised, surrounded by the new town of Fatehpur Sīkri.

Jahāngīr.

In 1605 Akbar died at Agra, and his son succeeded as Jahāngīr. Jahāngīr's son, Khusrū, attempted to seize the throne; but apart from this the reign at first passed peacefully in Upper India, though there was fighting elsewhere. In 1623 Khurram, another son of the emperor, rebelled and advanced towards Muttra, but was driven back to Central India. The next year he advanced through Orissa, while Abdullah Khān, a noble who favoured him, besieged Allahābād. The royal troops forced Abdullah to fall back on Jaunpur and Benares, where he met Khurram, who again retreated to the Deccan. Jahāngīr, like his father, was a great builder, and he raised a noble tomb over Akbar's remains near Agra, and added palaces in the royal forts at Agra and Allahābād. He received with distinction English travellers at Agra and elsewhere.

Shāh Jahān.

On Jāhāngir's death at Lahore in 1627, Khurram hastened to Agra and obtained the throne under the name of Shāh Jahān. Early in his reign the Bundelās, who had been turbulent throughout Akbar's life, but had been friendly to Jahāngīr, broke out and several expeditions were sent against them. In 1639 a raid was made on the Hindu temples which had been built at Benares in the previous reign, and many were destroyed; but the Provinces were generally at peace.

The careful system of government started by Sher Shāh, and improved by Akbar, still continued, though deterioration had commenced. The most splendid relic of the reign is the tomb of white marble, built at Agra on the bank of the Jumna by Shāh Jahān in memory of his wife, where the remains of the emperor and his beloved Mumtāz Mahal lie side by side under the most beautiful memorial of a life's devotion that the world has seen. In 1657 Shāh Jahān's health failed, and he was now to be treated by his own sons as he had dealt with his father. The favourite, Dārā Shikoh, was with him and regarded himself as heir; Shujā was in Bengal, Murād Bakhsh at Ahmadābād, and Aurangzeb, the most capable of all, in the Deccan. Dārā seized the treasure at Agra, and sent one army which surprised Shujā near Benares, and another to watch Aurangzeb and Murād Bakhsh, who combined forces and defeated it. The allies then marched on Agra, and were successful in a battle at Sāmogarh.

Aurangzeb entered Agra in 1658 and followed Dārā, who had fled to the Punjab. He formally assumed the throne at Lahore, while Shāh Jahān remained a prisoner in the fort at Agra till his death there in 1666. Shujā's forces took Benares, Chunār, Allahābād, and Jaunpur; and Aurangzeb abandoned the pursuit of Dārā, who had escaped to Sind, and returned to meet them. At a battle between Korā and Khajuhā in Fatehpur District, Aurangzeb won a decisive victory, which practically closed this war of succession. As in the previous reigns, these Provinces enjoyed comparative freedom from war; but the administration was harsh, and the way was being prepared for coming anarchy. At Benares and Muttra mosques were built upon the holiest temples. The poll tax on Hindus was revived; and although, as usual at the beginning of a reign, cesses were formally abolished, the religious zeal of the emperor and his continued absence and absorption in the affairs of the Deccan had bad effects on the administration. **Aurangzeb.**

When Aurangzeb died in 1707 he left a will advising his three sons to divide the empire. The second son, Azam, refused to accept the division and fell in battle at Jājau in Agra District, fighting the eldest brother, Muazzam, who became emperor under the title of Shāh Alam Bahādur. Kām Bakhsh, the youngest, died of wounds received near Hyderābād in the following year. The collapse of the Mughal power was at hand. Shāh Alam Bahādur died in 1712, and the approaching disasters became clearer. In less than fifty years eight rulers sat on the throne of Delhi. One of these, Muham- **Decline of Mughal power, 1707-61.**

mad Shāh, reigned for thirty years, and died a natural death; three were puppets, each reigning for only a few months; three more were murdered while reigning, and one was deposed and blinded. The dissolution of the empire was primarily due to the incompetence of these degenerate rulers; but it was hastened by the repeated attacks of the growing Hindu powers on the west, the north, and the south (the Jāts, Sikhs, and Marāthās), and the paralyzing shocks dealt by Persian and Afghān invaders from beyond the north-west frontier.

Jāts and Sikhs.

Before the death of Aurangzeb the Jāts had begun to give trouble west of Agra, and gradually extended their influence within the Provinces. The first incursions of the Sikhs, who had changed from a religious sect to a warrior nation, took place in 1709, when they invaded Sahāranpur and poured into Muzaffarnagar, but were checked there and driven back for a time into the hills.

Marāthās.

The most considerable factor was, however, the growth of Marāthā power north of the Vindhyas. The first appearance of Marāthā armies so far from the Deccan, where their influence was already paramount, took place in 1718, when they were invited to Delhi by one of the factions at the court of Farrukh Siyar. They withdrew for a time, but some years later (1729) they appeared again in what is now BRITISH BUNDELKHAND, where the Bundelās had been trying with variable success to throw off the Muhammadan yoke, and this area became subject to Marāthā rule and remained so for more than seventy years. A raid in which Agra and Etāwah were plundered (1737) was repulsed by Saādat Alī, the capable Wazīr of the empire and governor of Oudh, and for a time the Marāthās were held in check. They were, however, invited to return (1751) by Safdar Jang, nephew and successor to Saādat Alī, who required help against the Pathāns of Farrukhābād. The alliance was not lasting, and soon afterwards Safdar Jang found his former friends arrayed against him (1754).

Foreign invasions.

In 1738 Nādir Shāh swept down on Delhi, slaughtering and plundering; and although his stay was short, the blow to the empire was serious. An attempt by his successor, Ahmad Shāh Durrāni (1748), was repelled by Safdar Jang, but the shock caused the death of the emperor, Muhammad Shāh. A second invasion (1752) was more successful, and the Afghāns penetrated, five years later, as far as Agra, though they were unable to take that city.

Internal dissensions.

During the first ten years after the death of Shāh Alam Bahādur the predominant feature of internal politics at Delhi

was the struggle at court between the Irānī or Persian party and the Turānīs or people from Central Asia. Two Saiyid brothers, who belonged to the former party, were of great assistance to Farrukh Siyar in his struggle for the throne. The weak-minded emperor was then, however, won over by the Turānīs and lost his life at the hands of the Saiyids (1719). In 1720 one of the brothers was murdered, and the other was defeated soon after.

New states.

From this time commences the history of the new states which began to be formed within the Provinces, and became practically independent, though acknowledging the emperor as their nominal lord.

Oudh.

Chief among these was OUDH, which had hitherto been a mere province of the empire. Saādat Alī, a leading member of the Turānī party (though a Persian), was appointed governor of Oudh in 1721, and of Allahābād later; and though his abilities led to his being frequently employed elsewhere, he ruled efficiently through deputies. Safdar Jang, Saādat Alī's nephew and son-in-law, succeeded him, and maintained his position in Oudh, though he had constant fighting with the two Pathān powers of Rohilkhand and Farrukhābād which had grown up on his western borders. Both Saādat Alī and Safdar Jang, in addition to holding the province of Oudh, were Wazīrs of the empire; but in 1754 the emperor Ahmad Shāh deprived Safdar Jang of the latter office, in favour of a new Wazīr, named Ghāzī-ud-dīn.

Farrukhābād and Rohilkhand.

The Afghāns or Pathāns had first become important in these Provinces under Sher Shāh Sūri, himself a Pathān. The Mughal emperors who succeeded him discouraged them, till Aurangzeb made use of Pathān soldiers in the Deccan. A Bangash Pathān, named Muhammad Khān, who had served as governor of Mālwā and Allahābād, where he had failed to repel the Marāthās (1729), founded the city of FARRUKHĀBĀD near his birthplace, and established a practically independent power in the central Doāb. In 1740 a man of uncertain origin, named Alī Muhammad, who had been consolidating the Rohillas, was formally appointed governor of ROHILKHAND. He quarrelled with Safdar Jang and was banished for a time (1745), but was allowed to return (1748), and increased his influence considerably. When Alī Muhammad died (1749), Safdar Jang laid plots to annex both Rohilkhand and Farrukhābād. His first scheme was to promise Kaim Khān, Nawāb of Farrukhābād, a grant of Rohilkhand, if he could conquer it. The bait was taken, and the Nawāb marched to Budaun and lost

his life in battle. Safdar Jang at once annexed Farrukhābād; but Kaim Khān's brother, Ahmad Khān, drove out the governor who had been sent there, and then defeated Safdar Jang, thus acquiring a state which stretched from Alīgarh to Cawnpore. Having failed alone Safdar Jang called in the Marāthās, and Ahmad Khān fled to Kumaun.

Battle of Pānīpat.

When the third Durrāni invasion took place (1757) the situation was as follows. The infamous Wazīr, Ghāzī-ud-dīn, had blinded and deposed the emperor, Ahmad Shāh, and had set up a new ruler, named Alamgīr (II), whose authority was limited to a small area round Delhi. Najīb Khān, a Pathān, was in possession of the north of the present Meerut and Bareilly Divisions independently of the Rohillas, who held the rest of Rohilkhand. The central Doāb was subject to the Nawāb of Farrukhābād, and all the rest of the Provinces outside the hills was held by the Nawāb of Oudh, except Bundelkhand, which was in the power of the Marāthās. Najīb Khān had favoured the Durrānis, and when they withdrew to Kābul, the Wazīr, Ghāzī-ud-dīn, sought the aid of the Marāthās to crush him. Two years later (1759) Ghāzi-ud-dīn murdered the emperor, Alamgīr (II), and set a pretender on the throne, though Alī Gauhar, afterwards known as Shāh Alam (II), who had fled to Bengal, was generally recognized. The Rohillas and Shujā-ud-daula, Nawāb of Oudh, were seriously alarmed at the growth of Hindu influence, for Jāts and Rājputs had now united with the Marāthās for a final struggle against the Muhammadan powers. In 1760 Ahmad Shāh Durrāni returned to India, and was joined by the Rohillas and the Nawāb of Oudh. For two months the great armies representing the rival religions lay opposite each other near the historic site of Pānīpat, engaging in skirmishes, till early in 1761 a pitched battle took place, and the fortunes of Northern India were decided for a time by the crushing defeat of the Hindus.

Commencement of British power.

Shāh Alam had come into conflict with the English in Bihār, and in 1761 retired to Allahābād with the promise of an annual payment of 24 lakhs in lieu of the revenue of Bengal. Two years later the governor of Bengal, Mīr Kāsim, caused a massacre of the British at Patna and fled to Oudh, where Shujā-ud-daula took up his cause. The allies invaded Bihār, but failed to take Patna, and were defeated at Buxar (1764). The British advanced to Allahābād, and then met Shujā-ud-daula, who had again called in the Marāthās from Bundelkhand, near Jājmau in Cawnpore District. The Nawāb and his allies were defeated; and it was finally decided that Shāh Alam

should receive Allahābād and Korā (corresponding to the present Districts of Allahābād, Cawnpore, and Fatehpur) as well as 26 lakhs a year from the revenues of Bengal, while Shujā-ud-daula undertook to pay the British a contribution of 50 lakhs.

Hindu invasions. Although the battle of Pānīpat had broken up the coalition among the Hindus, it had not operated as a check on the incursions of the three principal members in the west of the Provinces. In the northern Doāb the Sikhs were continually raiding the territory held by Najīb Khān. The Jāts seized Agra, and attempted to take Delhi (1763); the gradual increase in their power was, however, checked by the progress of the Marāthās, who occupied Delhi, where Shāh Alam joined them against the advice of the British. When these successes were followed up by Marāthā raids in Rohilkhand the situation became serious. In 1772 Sir Robert Barker met Shujā-ud-daula, who attempted to gain the alliance of the Rohillas; but these distrusted him, and only agreed to join when their forces were broken up by the Marāthās.

Collapse of the Rohillas. The Marāthās then extorted from the wretched emperor a grant of the Allahābād territories, and in 1773 marched to Rāmghāt on the Ganges and demanded the amount due on bonds given to them twenty years before. British troops were now sent up to guard the Oudh frontier, and the Marāthās were forced to leave Rohilkhand, and later in the year were driven out of the Doāb. The Allahābād territory was then assigned to Shujā-ud-daula, on the ground that the emperor had forfeited it by his grant to the Marāthās. The Rohillas had been in triguing to the end with the Marāthās, and had refused to keep their engagements with Shujā-ud-daula, by which the English were also to benefit, so in 1774 British troops marched through Oudh, and Rahmat Khān, the Rohilla leader, was defeated and killed near Mīrānpur Katra in Shāhjahānpur, and Rohilkhand was made over to the Nawāb of Oudh.

Benares. When Shujā-ud-daula was succeeded in 1775 by Asaf-ud-daula, a new treaty was made with the British, by which they obtained the sovereignty of most of the Benares Division. Meanwhile the emperor's affairs had been well managed by Mirzā Najaf, who drove the Jāts out of Alīgarh, Muttra, and Agra, but had difficulty in repelling the Sikhs, whose yearly raids grew more and more serious. The Benares territory had remained under the rule of Rājā Chet Singh, who refused in 1780 to supply troops and pay an increased subsidy. Warren Hastings came to Benares, and an attempt to arrest the Rājā

led to an insurrection, which was soon quelled. Chet Singh fled and was replaced by Mahīp Nārāyan Singh, and British administration commenced soon after.

Progress of Marāthā power.

Except in the tracts liable to Sikh raids the Provinces were now fairly quiet for a few years; but the Marāthās appeared again with the Savoyard soldier, De Boigne. They seized Agra, Muttra, and the northern Doāb, and foiled the last attempt made to revive Muhammadan power in 1787. The infamous Ghulām Kādir, grandson of Najīb Khān, was forced back to Delhi, where he blinded the helpless old emperor, and Mughal rule was now at an end. North of Delhi a considerable area came into the power of George Thomas about 1795. The central Doāb was held by the Marāthās under De Boigne, who was succeeded by Perron in 1796; and Farrukhābād was still governed by a Nawāb, who recognized the authority of the Oudh government. The decline of the latter power led to the still further growth of British influence. Asaf-ud-daula died in 1797, and was succeeded (after a short interval, during which his reputed son, Wazīr Alī, reigned) by his brother Saādat Alī, who ceded to the British the fort of Allahābād, and promised an annual subsidy of 76 lakhs in return for a guarantee against invasion.

Formation of the Provinces.

At the commencement of the nineteenth century the British thus held only the present Benares Division (except South Mirzāpur) and the fort of Allahābād. In 1801, when Rohilkhand and other parts of the Oudh territory were in a state of anarchy, and a grandson of Ahmad Shāh Durrāni was threatening to invade India, Saādat Alī, Nawāb of Oudh, in return for a guarantee of protection, made over to the British the so-called 'Ceded Provinces,' which included the present Gorakhpur and Rohilkhand Divisions, with the Districts of Allahābād, Fatehpur, Cawnpore, Etāwah, Mainpurī, Etah, the south of Mirzāpur, and the Tarai *parganas* of the Kumaun Division. A year later the Nawāb of Farrukhābād ceded his shrunken dominions. Oudh was thus surrounded on all sides but the north by British territory. In 1803 war broke out with the Marāthās over events in Western India. Lord Lake, starting from Cawnpore, conducted a brilliant campaign, in the course of which he took Alīgarh by storm and occupied Delhi and Agra. The result was the acquisition from the Marāthās of (1) the 'Conquered Provinces,' which included the Meerut Division, the rest of the Agra Division, and the Districts round Delhi now in the Punjab; and (2) most of the present Districts of Bāndā and Hamīrpur, and small tracts in Jālaun, Gohad,

and Gwalior. The two last were restored to Sindhia in 1805. In 1816 a war with Nepāl, which had been caused by the repeated attacks of the Gurkhas on Gorakhpur, ended with the cession of the Kumaun Division and Dehra Dūn District.

All of these tracts were at first included in the Bengal Presidency, and brought under the immediate control of the Governor-General-in-Council. In 1833 an Act of Parliament was passed to divide the Bengal Presidency into two parts, that lying to the north-west being called the Presidency of Agra. A Governor was appointed; but the scheme was never fully carried out, and two years later another Act authorized the appointment of a Lieutenant-Governor. The North-Western Provinces as then constituted comprised the present Province of Agra, except Jhānsi and most of Jālaun, and also included the Delhi territories and Ajmer, which had been brought under the regular administration in 1832. Merwāra was added fourteen years later. In 1853 the Saugor and Nerbudda territories, which had been acquired in 1818, were formally incorporated in the Provinces. The Peshwā had ceded the sovereignty over the whole of British Bundelkhand in 1817, and between 1840 and 1853 Jhānsi and the rest of Jālaun and a part of Hamīrpur were acquired from petty rulers by lapse. Oudh was annexed in 1856. Immediately after the Mutiny the Delhi territories were transferred to the Punjab, while small additions were made to Bundelkhand, part of the *tarai* north of Oudh was given to the Nepālese, and a few villages in Bareilly and Morādābād were granted to the Nawāb of Rāmpur. The most considerable changes since the Mutiny have been the transfer of the Saugor and Nerbudda territories to the Central Provinces in 1861, and of Ajmer-Merwāra to the Government of India in 1871; but there have also been minor changes in Jhānsi and Bahraich.

Nineteenth century.

The old lawlessness did not pass away at once. In 1816 the levy of a house tax caused a serious outbreak in Rohilkhand, while in 1824 dacoity increased in Sahāranpur almost to the stage of insurrection. *Thagī* was rife throughout the Provinces, and for years the great rivers, which formed the principal trade routes, were infested by pirates. Two events of importance stand out beyond these matters—the annexation of OUDH and the great Mutiny. In Oudh the government had steadily deteriorated, and the kingdom was only kept together by British support. The king was called on to abdicate in 1856, and on his refusal was deposed.

Mutiny.

The Mutiny broke out at Meerut in May, 1857. It was

essentially a mutiny of the sepoys; but where representatives of former rulers were found, as at Bareilly, Farrukhābād, Bāndā, Cawnpore, Jhānsi, and elsewhere, these assumed the leadership. In other places the disorder took the form of anarchy rather than the revival of native rule; Etāwah District was actually administered by native officials and landowners for some time after the Collector had taken refuge at Agra. By the end of June the forts of Agra and Allahābād, and the Residency at Lucknow, were the only places still held by the British; but Cawnpore was retaken within a month, and the recovery began. After the fall of Delhi on September 19, Greathed's column marched down through the Doāb. At the same time the Lucknow garrison was reinforced, and it was relieved in November, though the city was not retaken until March, 1858. Rohilkhand was then reduced, while Sir Hugh Rose advanced from Central India and took Jhānsi in April, 1858. Rewards and punishments followed. The garrison in 1856 had consisted of about 53,000 native and only 5,200 British troops, and the latter number was raised considerably. The police force was reorganized and the population was disarmed, while forts were demolished. Subsequent disturbances have been chiefly dacoities and religious riots.

Archaeology. Buddhist.

The earliest archaeological remains which can be dated with certainty are the inscriptions of the great Mauryan king, Asoka, on pillars at Benares and Allahābād, and on a rock at Kālsī in Dehra Dūn District, which belong to the third century B.C. It is probable that the fine *stūpas* at Sārnāth near Benares and at Kasiā in Gorakhpur are even older, and the excavation of a *stūpa* at Piprahwa in Bastī District has yielded a casket bearing an inscription in characters of the third, fourth, or fifth century B.C. Fragments of stone railings and buildings, coins, clay seals, and other relics of Buddhism have been found in every part of the Provinces except the Himālayas. The principal sites that have been regularly excavated are Set Mahet (Gondā), Ahichhattra (Bareilly), Sankīsā (Farrukhābād), Muttra, and Bhuilā Dīh (Bastī); but many others await exploration.

Jain.

Excavations at MUTTRA have yielded Jain sculptures and fragments of Jain temples, some of which bear inscriptions dated in the time of the great Kushan kings (first or second century A.D.). In the Lalitpur *tahsīl* of Jhānsi District many fine Jain temples and sculptures of the mediaeval period (900 to 1100) are still in a fair state of preservation.

Hindu.

While there are many sites in the Provinces which popular tradition identifies with places mentioned in the great epics,

the earliest purely Hindu remains are those of the Gupta kingdom of the fourth and fifth centuries A.D. Inscriptions and a single copperplate of the early Gupta kings have been found in various places, from Gorakhpur and Ghāzīpur on the east to Etah and Bulandshahr on the west. A beautiful small temple near DEOGARH in Jhānsi District is assigned to this period. The disorder which followed the break-up of the Gupta power was not favourable to the architect and builder, while the temples raised between the eighth and twelfth centuries, when Kanauj was the seat of a great Hindu dynasty, were mostly demolished or converted into mosques by the Muhammadans. The remains of Hindu temples used in this way are especially noticeable at KANAUJ, JAUNPUR, AJODHYĀ, MUTTRA, and BENARES. In Kumaun and Bundelkhand, however, mediaeval temples have survived. The chief centres of Hindu religious life, at the present time, thus contain hardly any ancient Hindu buildings, and at Hardwār, Ajodhyā, Benares, and Muttra most of the temples have been built recently. During the tolerant reign of Akbar some fine temples were built at BRINDĀBAN, one of which (erected about 1590) is especially magnificent. The history of the mediaeval Hindu period has been largely recovered from inscriptions and from the study of coins.

Early Muhammadan. The early Muhammadans have left many memorials in the shape of mosques, *īdgāhs*, and tombs. The oldest among these are some buildings constructed at Budaun by the emperor Altamsh in the beginning of the thirteenth century. The finest specimens are, however, the great mosques at JAUNPUR, built two hundred years later by the Sharkī kings, which are particularly striking for their huge façades, recalling the propylons of Egypt.

Mughal. During the sixteenth and seventeenth centuries the emperors Akbar, Jahāngīr, and Shāh Jahān spent large sums on the adornment of the royal residences at FATEHPUR SĪKRI and AGRA, where stately palaces, magnificent tombs and mosques still recall the memories of the great Mughals. Much has been done within the last few years to repair and preserve these valuable treasures. In the eighteenth century the type of architecture deteriorated, though buildings of some beauty were built by the Rohillas and the Nawābs of Oudh.

Population. Density of population. The total population of the Provinces (1901) is 47·7 millions, and with dependent Native States 48·5 millions. The pressure on the soil is greater than in any other Province in India, for the number of persons per square mile in British

Districts is 445, or, excluding the nineteen largest towns in the Provinces, 427. But there are considerable variations. The Himālayan tract, with its forest land and steep mountain sides, supports only 95 persons to the square mile, and at the opposite end of the Provinces the infertile Central India plateau and hilly Mirzāpur District have an almost equal density of 197 and 192. In the submontane Districts and the great plain there is a gradual increase from west to east. The western sub-Himālayan Districts have 409 persons per square mile and the eastern 561. In the Gangetic plain the density rises from 512 in the west to 549 in the centre and 718 in the east. Twelve Districts have a density of less than 400, fourteen vary between 400 and 500, and twenty-two have a higher density. In Garhwāl only 79 persons are found to each square mile, while in Balliā there are 791, though the largest town in that District contains less than 16,000 inhabitants.

Towns and villages. There are seven cities with a population exceeding 100,000: namely, Lucknow (264,049), Benares (209,331), Cawnpore (197,170), Agra (188,022), Allahābād (172,032), Bareilly (131,208), and Meerut (118,129); thirty-one towns of between 20,000 and 100,000; and seventy of between 10,000 and 20,000. The total urban population, including that of 187 places possessing urban characteristics though the population is below 5,000, is 5,273,573, or about 11 per cent. of the total, which is larger than in most parts of India. The proportion of the urban population varies from 37 and 26 per cent. in Lucknow and Benares, where large cities are situated in small Districts, to less than 1 per cent. in Sultānpur, being lowest in the eastern parts of the Provinces and in the hills. Of the rural population 37 per cent. live in villages with a population under 500, and 52 per cent. in villages of 500 to 2,000, while inhabitants of villages of 2,000 to 5,000 form 10 per cent. and of larger villages 1 per cent. of the total. The term 'village' here means the revenue *mauza* or parish. In the western part of the Provinces the village sites are usually compact groups of houses, a relic of the precautions taken against Sikh invasions during the eighteenth century. In the centre and east scattered hamlets are more common, and in Ghāzīpur District there are 'villages' of 10,000 to 12,000 inhabitants without any single site containing as many as 5,000.

Growth of population. General estimates of the population of the Province of Agra were made in 1826 and 1848, and a Census was carried out in 1853, 1865, and 1872. In Oudh the first Census was taken in 1869. In 1881, 1891, and 1901 enumerations in both

Provinces were simultaneous with those throughout India. The variations are of doubtful value before 1869 and 1872, but it is certain that between 1853 and 1865 the population of the larger Province decreased considerably owing to the Mutiny, and to famine and disease. In 1872 there was an increase, in spite of the famine of 1868, and this Census probably understated the figures for the Benares Division, while on the other hand the Oudh Census of 1869 overstated the truth. According to the returns, the population of the United Provinces rose from 42,002,897 in 1872 (1869 in Oudh) to 44,107,869 in 1881; but the greater portion of this increase has been assigned to improvements in enumeration, and the scarcity of 1877–8 and the fever epidemic of 1879 probably kept the population stationary. In the next ten years (1881–90) the total rose to 46,905,085, an increase of 6·3 per cent. These were years of good rainfall, and the distribution of variations is closely connected with the character and position of different tracts. The period 1891–1900 was marked by two serious calamities: it began with wet years, culminating in the abnormal season of 1894, when the rainfall was 57 inches as compared with a mean of 37 inches. The following year rain was badly distributed, and in 1896 the monsoon ceased prematurely, causing widespread distress. The pressure of high prices was again felt in 1899 and 1900, when other parts of India were visited by severe famine. The Census of 1901 showed a population of 47,691,782, an increase of 1·7 per cent., which is little more than half the normal rate calculated in 1891. In the western plain the increase was 10 per cent., but the Himālayan tract was the only other portion which increased at a greater rate (2·6 per cent.) than the Provinces as a whole; the submontane tracts and the central plain increased by smaller amounts. On the other hand, the Central India plateau lost 8·4 per cent. of its population, the eastern plain 7·1, and Mirzāpur District 6·8 per cent.

In the Central India plateau, Allahābād south of the Jumna, Mirzāpur, parts of Agra and Etāwah and Hardoī, the failure of the crops, owing to drought in 1895 and 1896, was the main cause of the decrease, and would have been sufficient to affect the population seriously if the preceding seasons had been favourable; but its effects were intensified by the fact that untimely rainfall had caused serious damage to successive harvests and thus impaired the resources of the people. In the eastern plain and submontane tracts, however, the predominant factor was mortality due to disease caused by

excessive rain, and a corresponding decline in the birth-rate, while the damage to crops from the same cause was probably greater than the losses due to drought. The western plain and the Himālayan tracts, with small exceptions, suffered appreciably from neither flood nor famine, and a large part of the former benefited materially from the adversity of other regions.

There is no considerable influx of rural population into towns, and labour is often a difficult question in the few large manufacturing towns such as Cawnpore. Before British rule the growth of large towns and cities depended chiefly on religious sanctity and the site chosen as the seat of provincial governments. Benares, Allahābād, Bindhāchal, Ajodhyā, and Muttra are examples of the former, Benares being one of the principal seats of the Saiva cult in India, while Ajodhyā and Muttra are centres of the worship of Vishnu in his incarnations as Rāma and Krishna. Agra, Lucknow, Fyzābād, and Jaunpur are towns which grew up round the courts of native rulers. The cities which have thriven by trade may be divided into those in which the trade is chiefly concerned with the collection and distribution of produce, or of articles manufactured elsewhere, such as Bareilly, Meerut, Shāhjahānpur, Morādābād, Alīgarh (Koil), Sahāranpur, Gorakhpur, and Jhānsi; and those in which manufactures have become important, such as Cawnpore, Agra, Mirzāpur, and Hāthras. The growth of towns is at present in a transitional state. Railways have in many cases ruined the trade of former centres of distribution, while others have prospered and new ones have been formed.

Migration.

The people are not generally disposed to move from their homes. In 1891, 89 per cent. of the total population had been born in the Districts where they were enumerated, and in 1901 the proportion rose to nearly 91 per cent. Internal migration is chiefly due to the marriage customs of the Hindus, who contract alliances with persons living some distance away. Thus in 1891 nearly 80 per cent. of the persons who had been born outside the Districts where they were enumerated were females, while in 1901, after a succession of bad years which had caused men to wander in search of a living and had checked marriages, the proportion fell to 60 per cent. It is calculated that about 700,000 persons left for other parts of India between 1891 and 1901, while more than 100,000 were registered as emigrants to the West Indies, Fiji, and Natal, and there was a considerable exodus from the

eastern submontane Districts into Nepāl. The emigrants are of two classes: those who seek work, or in the case of females are married, in Districts adjoining the Provinces; and those who go to distant parts of India. The latter class of emigration has begun to be appreciable, and large numbers of persons from these Provinces are found in Assam, Bengal, Bombay, Burma, the Central Provinces, and Hyderābād. The Districts from which they chiefly go lie east of a line drawn through Allahābād and Fyzābād.

Age statistics.

The age returns of the Census are of little absolute value without adjustment, but are of some use for comparative purposes. Thus the proportion of Musalmāns per 10,000 of population is higher than that of Hindoos in each quinquennial period up to the age of fifteen, and again over the age of fifty, pointing to their greater fecundity and vitality. The distribution is appreciably affected by natural calamities, and the figures for 1901 show clearly the results of reduced birth-rates in 1895, following a year of fever, and in 1897 when there was famine. These results are most marked in the Districts worst affected. Thus in Jhānsi out of every 10,000 of population only 1,049 were under the age of five, as compared with a proportion for the whole Provinces of 1,268. The age returns also indicate the effect on population of calamities in earlier years, and show a difference between the distribution in urban and rural areas, there being a deficiency in age periods up to twenty in the former.

Vital statistics.

In rural areas only the few persons who are subject to the law for the prevention of infanticide (Act VIII of 1870) are bound to register births and deaths. Registration is carried out by means of the village policeman or *chaukīdār*. The *chaukīdārs* are usually illiterate, but are supplied with a note-book in which they get entries made, and which they take to the police station once or twice a week. The completeness of the record is checked by higher officials in the Police and Revenue departments, and also by members of the local boards, vaccinators, and Deputy Sanitary Commissioners. In urban areas, where the Municipal or the Cantonment Act is in force, it is usually provided by rules having the force of law that the head of the family in which a birth or death occurs, and also the sweeper employed in the house, shall report it within a week. Registers are also kept at cemeteries and burning *ghāts* in a few towns. Failure to report is punishable with a small fine. In cantonments the medical officers also are bound to report. Other urban areas are under the same rules

as rural areas, but supervision is better. As a rule each police circle is a unit of area, but places under the Municipal, Town Chaukīdārī, or Cantonment Acts, jails, reformatories, and lunatic asylums form separate units. Statistics are compiled in the office of the Civil Surgeon, and are forwarded through the District Magistrate to the Sanitary Commissioner. Testing by higher officials usually points to omissions varying from 2 to 3 per cent. of the number of entries tested, the rate of omission being slightly higher for births than for deaths. In periods of famine and epidemics deaths are not fully recorded. In 1901 the population according to the Census was less by 3·4 per cent. than the population deduced from vital statistics; but allowing for emigration the discrepancy was less than 1 per cent., and the number of infants under one year agreed closely with the number deduced from the vital statistics of the previous year. Over small areas migration is so considerable and so irregular, that the population at inter-censal periods cannot be calculated. The proportion of females born to each 1,000 of males has increased regularly from 877 in 1881 to 905 in 1891 and 931 in 1901, which indicates improvement in registration, as omissions are probably more common in the case of females.

The following table shows the ratio per 1,000 of registered births and deaths, and the mortality from characteristic diseases in the three decennial years 1881, 1891, and 1901, and also in 1904:—

	Population under registration.	Ratio of registered births per 1,000.	Ratio of registered deaths per 1,000.	Deaths per 1,000 from			
				Cholera.	Small-pox.	Fever.	Dysentery and diarrhoea.
1881 . .	44,107,869	40·34	31·79	0·58	0·39	24·95	1·88
1891 . .	46,905,085	33·26	31·14	3·60	0·56	22·02	1·06
1901 . .	47,691,782	41·35	30·30	1·13	0·02	23·46	0·57
1904 . .	47,691,782	46·67	34·70	0·14	0·15	23·92	0·50

In 1904 the registered birth-rate per 1,000 varied from 61 in Hamīrpur to 28 in Dehra Dūn, and the registered death-rate from 47 in Farrukhābād to 24 in Bāndā.

Disease.

The record of cause of death is, however, very incorrect. The *chaukīdār* classifies most diseases as fever, cholera, small-pox, or bowel complaints. Returns are obtained from medical

officers, their subordinates, and from private practitioners; but the number of deaths reported in this way is too small (11,228 in 1903) to give satisfactory results. Fever, as appears from the statement given above, is usually reported to be responsible for about 75 per cent. of the total mortality. Pneumonia, which is common in the cold season, and many other diseases accompanied by a high temperature are included under fever. In years of excessive rainfall the death-rate from fever increases largely. Thus in 1894, 1,495,372 deaths were reported from this cause, and in 1897 the number was 1,463,716, as the poorer classes had been enfeebled by the scarcity of the previous year. In the twenty-one years 1881–1901, the deaths reported from cholera have varied from 2,508 in 1898 to 200,628 in 1887. From 1881 to 1890 the average was 60,968, and in the next ten years 81,415. Deaths from small-pox averaged 54,717 in 1881–90 and 18,229 in 1891–1900, the largest number in any year being 202,541 in 1884 and the smallest 981 in 1901. A few cases of plague first took place in 1897, and in the following years there were small outbreaks. Early in 1901 the disease broke out more violently in the eastern Districts, and there were 9,778 deaths, chiefly in Benares (3,064), Balliā (5,278), Allahābād (661), and Jaunpur (712). The next year there was a more serious epidemic in Cawnpore District, where 9,753 deaths occurred, of which 6,336 were in the city. It has now been proved that *mahāmārī*, which has long been known in Kumaun, where it sometimes becomes epidemic, is identical with plague. In the early stages inspection on railways and the evacuation and disinfection of houses were found useful; but as the disease spread little could be done. Inspection on railways was abolished early in 1903, when the disease had become established in more than twenty Districts. The number of deaths from plague in 1904 was 179,082, the largest numbers occurring in Balliā (17,417) and Azamgarh (16,994). In 1905 the number rose to 305,737; the worst-infected District was Muttra, where 45,644 deaths from plague were recorded, and it is estimated that one-eleventh of the population were swept away by the epidemic.

Infant mortality.

The death-rate of infants under one year of age (calculated on the mean number of births during the year under report and that preceding it) was 238·4 per mille in 1881–90, 230·1 in 1891–1900, and 232·7 in 1901. The lowest rate was 190·7 in 1893, and the highest 272·5 in the famine year, 1897. In 1903 the rate rose to 274, owing to the prevalence of measles.

Female infanticide. Among Hindus some castes are divided into groups of different social standing, and a woman must marry into a group at least equal to, and if possible higher than, her own. The females of the highest groups thus find a difficulty in obtaining suitable husbands, and among Rājputs, Tagās, Jāts, Ahīrs, and Korīs this has led to female infanticide. The crime was formally declared murder by Bengal Regulation XXI of 1795, and attempts were first made to stop it by reforming public opinion and taking engagements from leading Rājputs to give up the practice. These attempts failed, and after much discussion a system of registration of births and deaths, which had been tried with more success, was legalized by rules made under Act VIII of 1870. The rules, which are enforced only where the practice is found to exist, provide that the head of a proclaimed household shall report every birth and death in his family, and every illness of a female child, to the *chaukīdār*, who reports such events, and also the departure of pregnant women, at the police station. Registers are kept by the police and checked on the spot by higher officials. In 1870, 590,560 persons were on the registers; but the number fell to 285,680 in 1881, 60,992 in 1891, and 44,173 in 1901, the decrease indicating the success obtained in checking the practice against which the rules were directed.

Infirmities. The proportion of insane persons to the total population in 1901 was 1·44 per 10,000, the rate for males being double that for females. In some of the Districts watered by the large rivers flowing from the hills cretinism affects the proportion, as idiocy is not distinguished from other forms of mental disease. This is more distinctly marked in the case of deaf-mutes, whose proportion is 3·73 per 10,000 over the whole Provinces, whereas the figure rises to 11 in Tehrī, 15 in Garhwāl, and 20 in Almorā. Nearly 17 males and nearly 18 females out of every 10,000 are blind, the highest proportion (about 30) being found in the central Districts. The proportion of lepers is 2·37 per 10,000, but the disease is more prevalent in hill Districts, the proportion rising to 20 in Almorā. Both blindness and leprosy appear to be decreasing.

Sex statistics. The proportion of females to 1,000 males in the Provinces as a whole has risen from 925 in 1881 to 930 in 1891, and 937 in 1901. In the western plain it falls to 868, while in the eastern plain it rises to 1,039. There are two well-defined areas in which the number of females is equal to, or greater than, the number of males, namely Garhwāl and Tehrī in the hills and a continuous group of nine eastern Districts: in Balliā

the proportion is as high as 1,084. The area where females are proportionately fewest is a compact group of Districts in the western plain, namely Mainpurī, Etāwah, Farrukhābād, Etah, and Budaun, in which the proportion varies from 837 to 854. Allowing for the concealment of females at enumeration and for the effects of infanticide, both of which are probably of little effect now, and also for emigration, it appears that the proportion of females has some connexion with race, being highest where Aryan blood is diluted to a considerable extent with aboriginal.

The marriage ceremony among Hindus does not usually mark the commencement of conjugal life. In the highest castes the postponement of marriage till the age of puberty entails social discredit, but cohabitation is deferred till the bride has attained maturity. In the lower castes the age of marriage is later, and in some of the lowest consummation is a part of the ceremony. Some castes which have become Hinduized in recent times have not yet adopted the strict rule of child-marriage. The results of each Census during the period 1881–1901 point, however, to the conclusion that child-marriage is increasing. Taking both sexes together, only 10 per cent. of the population aged 15 and over are unmarried; but in the case of males 18 per cent. of Hindus and 17 per cent. of Musalmāns are unmarried, while the proportion for females sinks to 3 and 4 per cent. respectively. Marriage is usually earlier in the east of the Provinces than in the west. There are also fewer unmarried persons in the east, and castes in which marriage is latest have the largest proportion of such. Direct prohibition against the remarriage of widows is in force only among about one quarter of the Hindu population; but where remarriage is allowed, the second marriage, though legal, is celebrated without the usual rites, and bears a different name from ordinary marriage. Widowers also marry again less frequently than in European countries. Divorce is uncommon among Hindus, and if wives are put away for unchastity, they cannot remarry except in the case of the lowest castes. Among Musalmāns divorce is permitted, but is strongly reprobated, and a practical check is put on it by fixing the nominal dower (which is repayable on divorce) at an amount the husband could never pay. Polygamy is allowed by many Hindu castes, and is permitted in all cases where a first wife is barren. There were 1,107 married females to 1,000 married males among Hindus in 1901, and 1,032 among Musalmāns. The marriage of two sisters either at the same

Civil condition.

time or one after another is not forbidden. Polyandry is prevalent in the Jaunsār-Bāwar *pargana* of Dehra Dūn; but the husbands must be brothers, i.e. sons of the same set of fathers, and succession is traced through males, not through females.

Statistics of civil condition in 1891 and 1901 are given below:—

	1891.			1901.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Unmarried	17,884,357	10,944,402	6,939,955	18,169,477	11,063,796	7,105,[illegible]
Married .	23,694,288	11,820,410	11,873,878	23,948,963	11,913,792	12,035,[illegible]
Widowed .	5,326,146	1,538,415	3,787,731	5,573,342	1,639,354	3,933,[illegible]
Total	46,904,791	24,303,227	22,601,564	47,691,782	24,616,942	23,074,[illegible]

Language. Three distinct languages are spoken by the bulk of the people in the plains. The central portion, roughly bounded by a line drawn north and south through Bāndā town on the west and a parallel line through Mirzāpur on the east, is the Eastern Hindī tract, with a population of nearly 15 millions. Western Hindī is spoken by over 22 millions west of this area, and Bihāri by 10 millions east of it. The official language is Urdū or Hindustāni, a dialect of Western Hindī. An educated native usually speaks Urdū to everybody but the members and private servants of his own family, with whom he uses the language of his birthplace. Prose is written in Urdū, or in what is called High Hindī, which is identical with Urdū in grammar, but replaces all words of Arabic or Persian origin by Sanskrit. Written verse is usually in Urdū, or in the Braj dialect of Western Hindī, but Eastern Hindī is also used. The majority of the natives in all parts can understand Urdū and High Hindī, if pedantic Persian or Arabic words on the one hand, and Sanskrit words on the other, are avoided. In the hills Central Pahāri is spoken by 1¼ million people, and appears to be connected with the languages of Rājputāna. Of languages foreign to the Provinces, English, Bengali, and Nepālī, or Parbattia, are most spoken, but the proportion of speakers of each of these to the total population is small.

Language statistics for 1891 and 1901 are given in the statement on following page.

Caste, tribe, and race. (*a*) Hindus. The most prominent characteristic of the Hindu caste system is that it divides the people into a large number of groups primarily distinguished by the fact that they are endo-

gamous. Within the caste or tribe (which are distinguished by European students, as being based respectively on community of occupation, and on descent from a common ancestor or on common occupation of territory) are found other divisions, usually endogamous, which are sometimes further divided into exogamous groups. Where exogamous groups are found,

	Chief vernaculars of the Provinces.								Other languages.
	Western Hindī.	Eastern Hindī.	Bihārī.	Nepālī, Parbattia, or Gorkhālī.	Central Pahārī.	Gipsy dialects.	Bhotiā of United Provinces.	Total.	
1891	45,881,968			18,035	836,694	77,374		46,814,071	90,720
1901	21,588,984	14,905,187	10,056,056	24,088	1,004,404	353	10,231	47,589,303	102,479

a further distinction lies in the fact that these are often classified by social status, and a woman must, as observed above, marry into a group equal, and, if possible, superior, to her own. The Rājput, Thākur, or Chhattrī caste contains only exogamous groups, and the rule of hypergamy is here strictly observed, though the position of individual groups varies in different Districts. Intermarriage between members of the same endogamous division is prohibited, even where there are no exogamous groups, within five degrees on the mother's side and seven on the father's. The caste system is constantly undergoing a variety of minor modifications. Thus the Mochī who works only in leather has split off from the Chamār who works raw hides. Groups from different castes have united to form the Mallāh or fishing and boating castes, but each group remains endogamous. The Sādhs are an example of a more complete union, where different groups have intermarried and formed a new caste through the common tie of a new religious movement. Where hypergamy is in force, neglect of the principle lowers the division or family concerned, while, on the other hand, castes ambitious to rise adopt child-marriage and prohibit the remarriage of widows. A caste, the members of which are prospering, often claims to be considered as Brāhman or Rājput, much as a rich Englishman discovers that his ancestors came over with the Conqueror. Theoretically, the Hindus are divided into four main castes: the Brāhmans or priests, the Kshattriyas or warriors, the Vaisyas or traders, all of which are called twice-born; and the Sūdras. Investiture with the sacred thread at the so-called second birth may be

compared with the Christian rite of confirmation. According to native ideas the first three of the main castes mentioned above are Aryan, and the last of aboriginal or mixed origin. In practice, however, several castes claim rank alongside of those admitted to represent the first three main classes, and their claims are partially admitted, while many distinctions exist among the Sūdras. Thus twelve classification groups can be formed, of which three represent the twice-born and three more the castes allied to these, with a total of 10½ millions. The seventh group, with over 750,000, includes castes definitely held not to be twice-born though higher than Sūdras. The eighth, ninth, and tenth groups, with nearly 19 millions, include persons from whom the twice-born (or some of them) can take certain kinds of food, or can or cannot take water; while the other two groups, with 10 millions, include castes whose touch defiles a member of the twice-born castes, distinguished from each other by the fact that they do not or do eat beef. The largest single castes arranged in order of social precedence are Brāhman (4,706,332), Rājput (3,403,576), Baniā (1,332,432), Ahīr (3,823,668), Lodha (1,063,741), Kahār (1,237,881), Pāsī (1,239,282), and Chāmar (5,890,639). No other caste numbers a million. Variations in the distribution of different castes are noted in articles on Districts.

(*b*) Musalmāns.

Contact with Hindus has produced some imitation of their customs among Muhammadans. Thus there is a tendency to form endogamous groups, chiefly marked in the case of converts who still preserve a tradition of their Hindu origin. While, however, converts often retain Hindu prohibitions based on affinity, which are stricter than the rules of Islām, families of pure foreign origin intermarry within very narrow circles. Among Hindus members of different castes will ordinarily not eat articles of certain kinds of food together; but the followers of Islām observe no such restrictions, save that food or water would not be taken from a sweeper, and very strict Muhammadans refuse to eat with Christians. Musalmāns may be divided into three classes: (1) the foreign tribes, Saiyid (257,241), Shaikh (1,340,057), Pathān (766,502), and Mughal (82,334). Many of these, especially the so-called Shaikhs, are certainly descended from converted Hindus. (2) Converts retaining Hindu caste names (2,233,486), the largest castes being Rājput (402,922), Behnā (356,577), Nai (219,898), Telī (207,863), and Darzī (161,298). (3) Occupational groups, also chiefly of Hindu origin (1,895,176), including Julāhā (898,032) and Fakīr (334,762).

The three main physical types are Dravidian, Mongoloid, and Aryan. The first is found pure in South Mirzāpur and Bundelkhand; but many castes in the eastern and central Districts show the broad nose and dark colour which characterize the type. In the Aryan type, which is common among the higher castes, especially in the western Districts, the features are more finely cut, and in particular the nose is thin and the complexion fair. The majority of people show a mixture of these two types, the proportion of Dravidian blood increasing in the east. In the sub-Himālayan and Himālayan Districts the Mongoloid type is found. This is marked by a short head (the other two types being dolichocephalic), a broad nose, prominent cheek-bones, and a yellow colour. **Physical characteristics.**

In 1901, out of a total population of 47,691,782, Hindus numbered 40,691,818, or more than 85 per cent., and Musalmāns 6,731,034, or 14 per cent. The total of all other religions is less than 0·6 per cent., and this includes Christians 102,469, of whom 68,841 are natives; Jains, 84,401; Aryas, 65,282; Sikhs, 15,319. The Musalmāns dwelling in the Provinces are more prolific than the Hindus, and longer lived, partly no doubt because they are, on the whole, better off, enjoy a more liberal diet, form a large proportion of the total in the more prosperous western Districts, do not practise child-marriage largely, and allow remarriage of widows. They are, therefore, increasing faster than the Hindus; but there is no reason to suppose that any considerable number of persons are being converted to Islām at the present time. On the other hand, the Hindus lose by conversion to Christianity and the Arya Samāj. **Religion.**

The term Hinduism includes in these Provinces an immense variety of ideas and beliefs, which vary in character from systems founded on the deepest philosophical speculations to Animistic tenets little advanced beyond those of the wild jungle tribes in Central India, though the persons who profess the latter stoutly advance a claim to be considered Hindus. The absence of dogma renders it impossible to embody the tenets of Hinduism in a definite creed; and the sanctity attached to Brāhmans and cows, which is perhaps the most prevalent distinguishing feature of the system, is not recognized by some classes universally regarded as within the pale. For convenience the Vedantists may be considered as the orthodox school, and their creed may be summed up as a belief in the uniformity of the nature of God, soul, and matter, the present world being an illusion caused by *māyā*. The so-called sectarian divisions of Hinduism have usually been formed by a **Hinduism.**

tendency to recognize a personal God, and they may be grouped into those who especially regard Siva as supreme and those who render similar allegiance to Vishnu. But even among these there is a constant tendency to relapse into pantheism. No estimate can be given of the number of orthodox Hindus; but it is certainly not large, as the fundamental ideas are too difficult to be comprehended by the masses. In 1901 only 1,290,094 persons declared themselves as Saiva sectarians, and 2,571,232 as Vaishnavas. The majority of Hindus incline to a belief in a personal God; but this belief is very vaguely defined, and for the circumstances of everyday life much more importance is attached to imploring the aid of benevolent minor deities, or averting the influence of demons, than to devotion to a supreme being. The doctrine of transmigration is firmly held by all classes of Hindus from the highest to the lowest, and the belief that a man shall reap as he has sown is an appreciable factor in the moral sanction; it is especially powerful in the more backward tracts of Kumaun and Bundelkhand.

Arya Samāj.

The Arya Samāj, which was founded about 1875 in Bombay, has prospered in these Provinces, and its adherents in 1901 had almost trebled their number since 1891. They are found chiefly in the three western Divisions of Meerut, Agra, and Rohilkhand, and commonly belong to the higher castes. The distinguishing features of this reforming movement are monotheism, the rejection of the divine inspiration of all Hindu sacred books except the hymns of the Vedas, the prohibition of idol worship, and the discouragement of most of the ritual observed by Hindus. The Samāj also aims at social improvements, especially the spread of education, the raising of the age at which marriage takes place, the remarriage of widows, and the simplification of restrictions based on caste custom. A Hindu sect of recent origin called Rādhā Swāmī was recorded in the Census of 1901 as having more than 15,000 adherents, and its tenets are remarkable as showing some resemblance to the Christian doctrine of the Trinity, though it is evidently a development of the Kabīrpanthī sect of Vaishnavism. Both these reforming movements have been strenuously opposed by the orthodox Hindus, and in particular by the Brāhmans, whose authority they threaten.

Islām.

The two principal sects of Muhammadans in these Provinces are the Sunnis (6,430,766) and Shiahs (183,208), while Musalmān sweepers, who have a special cult, numbered 64,292. The most marked distinctions between Sunnis and Shiahs are

in ritual, and in the refusal of the latter to recognize Abu Bakr, Omar, and Othmān as successors to the Prophet. Wahābis are very few, and the sect founded recently by Ghulām Ahmad of Kādiān in the Punjab has made little progress.

A Roman Catholic priest from Bengal first visited Agra in 1578, and other missions followed, but were not very successful. Protestant influence commenced with the solitary conversion made by Henry Martyn at Cawnpore in 1810. The Baptist Mission Society entered the field in 1811, followed by the Church Missionary Society at Agra (1813), at Meerut (1815), and at Benares (1818). Native Christians have increased from 23,406 in 1891 to 68,841 in 1901, the increase occurring almost entirely in the American Methodist Episcopal Church, which commenced operations in 1859, and labours chiefly in the western Districts, its converts being mostly from low castes. Christian missions.

The whole of the Provinces is included in the Anglican see of the Bishop of Lucknow, who resides at Allahābād. A Roman Catholic Archbishop has his head-quarters at Agra and a Bishop at Allahābād.

The statistics of the population belonging to the chief religions in 1891 and 1901 are given below:—

Year.	Hindus.	Musalmāns.	Christians.		Others.
			Total.	Natives.	
1891 . .	40,379,907	6,346,629	58,437	23,404	119,818
1901 . .	40,691,818	6,731,034	102,469	68,841	166,461

In the Census of 1901, 16,212,668 males and 7,095,539 females were recorded as actual workers, and 24,383,575 persons of both sexes as dependants. Of the former 10,643,272 males and 4,493,314 females were supporting themselves, and also 16,247,729 dependants, by agriculture and pasture, so that these two groups of occupations are the principal means of subsistence of two-thirds of the population. Proprietary interests in land support 3,441,879 persons, while 22,997,560 are tenants and 4,362,774 are field labourers, about one-sixth being regular farm servants. About 3 million persons were shown as non-agricultural labourers and their dependents; 2,678,334 were supported by personal, household, or sanitary service; and 2,650,282 were engaged in the provision of food, drink, and stimulants, more than three-quarters of these being occupied with the provision of vegetable food. Of 1,890,129 persons dependent on occupations connected with textile Occupation.

fabrics and dress, 947,873 were supported by hand-weaving of cotton goods, and 318,984 more by tailoring and darning. The number of persons occupied with the preparation and supply of material substances of all kinds was 7,134,280. Of these, 76,015 were dependent on occupations carried on in factories, the principal classes being sugar refineries (31,973), cotton-ginning, cleaning, and pressing mills (13,806), spinning and weaving mills (1,480), printing presses (6,696), lac factories (4,942), distilleries (4,058), and indigo factories (3,997). The commercial population numbered only 366,545, while the professional classes numbered 622,184, of whom 228,986 were recorded as priests, ministers, &c., 40,016 as lawyers, 23,070 as medical practitioners without diploma, and 17,051 as midwives; as many as 606,870 persons are supported by ordinary begging, while 85,454 are religious mendicants. The number of females returned as actual workers is greater than the number of males in the case of field labourers, and is considerable in the case of grain-parching, oil-pressing, weaving and spinning of cotton (hand industries), basket-making, and general manual labour. In cities the number of female workers is only 30 per cent. of the number of males, as compared with 44 per cent. for urban and rural areas together.

Food. The two principal meals are taken in the morning and evening, and consist of unleavened cakes called *chapātis*, made of the flour of wheat, barley, or millet (*bājra*, *jowār*, or *manduā*), according to the means of the consumer. With these are eaten vegetables and pulse cooked with clarified butter (*ghī*). Rice is often substituted in the central and eastern Districts, but is less used in the west, except by the well-to-do. Sweet cakes are eaten in the middle of the day or early afternoon, and often at the evening meal. Mutton and beef are universally used by the Musalmāns, and mutton by high-caste Hindus of the Saiva sects, and by lower caste Hindus when they can afford it. The poorest classes make their principal meal in the evening, and in the morning eat some parched grain or gram in the western Districts, barley or rice in the central and eastern, and maize everywhere. Mangoes and, where found, the *mahuā* flower (*Bassia latifolia*), form an important addition in the hot season. Potatoes are commonly eaten in the hills, and their use is spreading in the plains.

Dress. The characteristic article of dress for a male Hindu is the *dhotī*, consisting of a piece of cotton about 5 yards by 1¼, woven in one piece, which is wound round the waist, the width hanging below the knees and the ends being tucked in; above

this is worn a sort of coat or a shirt. The upper classes wear both shirt and coat, and the use of trousers is increasing among educated men, though the *dhotī* is still worn at home. In the hills rough woollen cloth is much used. The usual head-dress is a turban, often of large size in the west; caps are largely worn by the younger generation. Musalmāns wear trousers or drawers, tight below the knee and fuller at the waist. They button their coats to the left instead of to the right like Hindus and Europeans. Females not observing *parda* wear a *dhotī* in the east and south-west. It is wide enough to reach from the waist to the ankles, and is so long that one end can be brought over the upper part of the body and head, while a loose bodice is also worn, though not universally. In the east it is generally undyed; but in Bundelkhand red is a favourite colour. In the west a coloured petticoat is worn, with a very short tight bodice, and a sheet covering the head and upper part of the body.

Dwellings. In the hills, in Bundelkhand, and in parts of Muttra and Agra Districts stone is the ordinary building material. Elsewhere bricks, burnt or sun-dried, mud, and wattles are used. Burnt bricks are, however, a luxury. The ordinary type of house contains a small courtyard with a sitting-room opening from it, which is also the bedroom for the males, besides an inner room for females, and a few small store-rooms. In the Meerut and Rohilkhand Divisions the apartments of from ten to twenty families are often built round a large central court. In the submontane Districts, where rainfall is heavy, the walls of huts are of brushwood plastered with mud. In the west flat roofs are used; but elsewhere houses are thatched or tiled.

Disposal of dead. Hindus cremate their dead as a rule. Ascetics are buried, and also children who die unmarried and persons dying of small-pox, while some of the lower castes always bury their dead. The ashes are thrown after cremation into some sacred river, if possible the Ganges, but the poor burn corpses very imperfectly and throw them half-consumed into a river or even a canal. Musalmāns always practise inhumation, and look on cremation as disgraceful. They also raise memorial stones or buildings, while Hindus do not, save in exceptional cases.

Amusements. Children's games are usually marbles or forms of tip-cat; but cricket and football, especially the former, are becoming very popular in towns and villages where schools exist. Kite-flying is practised by both children and adults. Chess is played, with some variations from European rules; but a

commoner game is *pachīsī*, a kind of fox and geese. Card games are not much played, but are said to be becoming more popular. Gambling with dice and more primitive appliances is chiefly confined to the lower classes. Pigeon-flying and fights between partridges or quails are popular. Shooting, as a sport, is practically confined to Gurkhas, Rājputs, and the better class Muhammadans; but there are professional hunting castes and gipsy tribes who trap vermin and small game for food. Theatrical performances have been revived within the last fifty years; but the performers are usually Bengalis or Pārsīs, and females rarely appear on the stage. Conjurers, buffoons, acrobats, and the like are common. The Hindus are very fond of recitations from their sacred books, especially the Rāmāyana, and of ballads about heroes of bygone days, while Musalmāns collect for readings on religious subjects. Private reading for amusement or instruction is exceptional.

Festivals. Among Hindus festivals largely take the place of other amusements. They celebrate the commencement of spring early in February, and six weeks later the Holī begins, degenerating among the lower classes into a saturnalia. In August the twice-born castes put on a new sacred thread, and all castes tie coloured threads round their wrists. The greatest festival of the year is the Dasahra or Rām Līla in September or October, when the story of the Rāmāyana is recited and acted during a week, the final triumph of Rāma being celebrated with many fireworks and much noise. In November the full moon of the month of Kārtik marks the harvest-home and commencement of winter. Many other festivals take place in different localities; and at the sacred places there are special days for bathing in river or tank, when the lower and middle classes combine pleasure with devotion. Gaily-dressed crowds visit the booths in the fair to make purchases and see peep-shows and other small entertainments. The Muhammadans commemorate the death of Hasan and Husain by carrying lath and paper models of tombs to a place known as Karbala near each town, where they are buried or thrown into rivers. Though the anniversary is one for Shiahs, the Sunnis join, and it is considered a holiday. The Id-ul-Fitr marks the end of Ramzān, the month of fasting, and the Id-uz-Zuha commemorates the sacrifice of Ishmael by Abraham. The death of the Prophet (Bāra Wafāt), and the day on which the destinies of mankind for the succeeding year are believed to be fixed (Shab-i-barāt) and prayers are offered for the dead, are also observed. The lower classes flock to the shrines

of saints on certain days, being often joined by Hindus. In Jain festivals a striking feature is the carrying of images in elaborate cars.

Nomenclature.

Surnames are almost unknown. Some Brāhmans use a kind of title, such as Misra, Sukul, Pānde, &c., while Rājput and Jāt names end in Singh (= 'lion'). Opprobrious names are often given to avert ill-luck, such as Dukhī ('afflicted'). With Musalmāns, Khān usually denotes a Pathān and Beg a Mughal; almost all names have a meaning, e.g. Abdur Rahmān ('slave of the Merciful'). The ordinary honorary titles are Rājā (with various degrees, Mahārājā, Rājā Bahādur, &c.) and Rai Bahādur for Hindus, while for Muhammadans Nawāb corresponds to Rājā, and Khān Bahādur to Rai Bahādur. The common affixes used in place-names are: *-pur*, *-pura*, *-purī*, *-nagar*, *-gawa*, *-gānw*, and *-shahr*, all meaning 'town' or 'village'; *-garh* or *-garhī* ('fort'); *-ganj* ('market'); *-sarai* ('inn'); *-pattī* ('share of land'); and *-ābād* ('inhabited' or 'settled by'). The first three (*-pur*, *-pura*, *-purī*) are also modified or contracted into *-oli*, *-auli*, *-aur*, *-auri*, and *-aula*.

Agriculture. Soils.

The soils of the Provinces fall naturally into three main groups: the valley soils of the Himālayas, the main alluvium, and the Central Indian alluvium. In the Himālayas, small patches of cultivation are to be found in the valleys and on the hill-sides where the ground is sufficiently level. The soils are of local origin, and their composition varies with the nature of the rocks from which they have been formed. The second group, the main alluvium, includes the greater portion of the Provinces, stretching from the Himālayas on the north to the Jumna on the west and south, and extending south of this river over a belt of varying width. The soil in this tract has been brought down mainly from the Himālayas, but no specific account can be given of its origin. The fluvial action which deposited the soils must have effected the more or less complete intermixture of the water-borne detritus; and the main differences between one soil and another lie more in the average size of the particles than in their chemical composition, even the soils known conventionally as clays or heavy loams containing a large preponderance of silica in a state of minute subdivision. The local differences in soils may be attributed to the sifting action of the water from which they were deposited, the deposits varying largely with the velocity of the current. From the chemical point of view the great bulk of the alluvium contains adequate quantities of lime, potash, and phosphoric acid. The amount of nitrogen present at any

one time is small when judged by European standards; but there is reason to believe (though the matter has not yet been fully worked out) that the process of nitrification is much more rapid than in colder climates, so that the small supply is more often renewed. The classification of soils recognized by the agricultural community is sand (*bhūr* or *baluā*), loam (*dumat*, *doras* or *rauslī*), and clay (*matiār*). A light loam which prevails over large areas is known as *pilia* or *pilota*; while the stiffest cultivable clays, suitable only for inferior rice, have various local names. The heaviest clays constitute the soil known as *ūsar*, which is impervious to water and cannot be tilled by the simple methods at the ordinary cultivator's disposal: some *ūsar* tracts have the further disadvantage of containing such quantities of sulphate and carbonate of soda as to render cultivation out of the question without measures of reclamation which are beyond the means of the people, and the permanent efficacy of which is still uncertain. A cross classification of soils, depending on the distance from the village site, is recognized over the greater part of the Provinces, the thoroughly manured home lands (*goind* or *gauhān*) being distinguished from the outlying fields (*bārha* or *pālo*), while in some localities a middle zone (*manjhār* or *miyāna*) is also distinguished. This classification disappears towards the north and west of the plain, where current agricultural practice requires that the manure should be distributed over the whole village area and not concentrated on the fields nearest the site.

The soils of the Central Indian alluvium, found principally in the BUNDELKHAND Districts and derived mainly from the denudation of the Central India plateau, differ more widely in composition. The most characteristic is the 'black soil' (*mār*) with its lighter variant (*kābar*): it contains exceptional quantities of lime and sulphuric acid. The other soils in this region are a light loam (*parwā*) resembling in general character the soils of the main alluvium, and a gravelly soil (*rākar*) which is ordinarily very inferior.

Conformation of surface.

The conformation of the surface in the hill Districts varies from place to place, the minute fields being terraced wherever the slopes are sufficiently gentle to allow of it. The main alluvium slopes generally from the north and west: its flatness is broken by occasional sand-hills, by depressions which form more or less adequate drainage lines, and by the broad valleys of the larger rivers, often several miles in width, with the shifting river-bed occupying a comparatively small portion of the valley. The Central Indian alluvium is broken, especially

towards the south of the region, by abrupt rocky hills, while the plains are scarred by extensive systems of ravines running into the rivers.

Over the whole Provinces the monsoon sets in usually in June, and the air is more or less completely saturated with moisture till the close of September. The rainfall during this period varies with the locality, being greatest in the hills (50 to 60 inches); in the plains it decreases from east to west and also from north to south; thus the Gorakhpur and Benares Divisions receive about 40 inches, while the Agra Division receives on the average from 25 to 30 inches. The type of weather changes rapidly in October: the air becomes much drier and rain occurs only as the result of storms travelling from the westward. The fall between October and February averages from one to five inches in different years. From March until June the weather is hot and very dry, and such rain as occurs is chiefly received from local thunderstorms. Rainfall, humidity, &c.

The system of cultivation is determined by the conditions of the soil and rainfall just described. As soon as the first rain falls in June the land is ploughed and sown with crops, such as rice, millets, maize, and cotton, which thrive in a warm moist atmosphere with heavy rainfall. These are harvested at different periods from August to December, and meanwhile preparations are being made for cold-weather crops which are sown in October and November. Wheat, barley, and pulses are the staples at this season, the first being usually, and the two latter occasionally, irrigated by artificial means. These crops are harvested in April, and the fields are usually bare until the rains set in, though in the east of the Provinces a small millet (*Panicum miliaceum*) is occasionally raised with irrigation, and in the canal districts indigo is commonly sown in April and May. Sugar-cane has a season of its own, being planted from January to April and harvested between the following December and March. The prevailing rotation is to grow a rains crop in the first year and a cold-weather crop in the second. The crops sown, especially in the rains, are usually mixed, one or more pulses being sown with a large millet, while when a cereal is grown alone in the rains the spring crop next year will frequently include a pulse. On land which from its situation can only produce rice in the rains, a pulse is, where possible, grown in the cold season. Much of the manured land produces two crops in the year, and the practice of taking two crops a year off unmanured land is spreading as the pressure on the soil increases. The most remarkable System of cultivation.

feature of the system of cropping is the extent to which plants of the order *Leguminosae* enter into the rotations adopted; the system has so developed as to secure a frequent renewal of the supply of nitrogen assimilated from the air by certain micro-organisms which dwell on the roots of plants of this order.

In the Himālayan tract there are usually two harvests in the year. Ordinarily rice and *manduā* (*Eleusine coracana*) are sown in April or May and reaped in September; while wheat, barley, mustard, and pulses are sown in November and reaped in April. But the periods vary with the altitude. In very high altitudes the spring crop does not ripen till August. On the low, warm, and irrigated lands rice and wheat are grown in rotation during the year. On the higher, unirrigated lands there is usually a two years' rotation of rice, wheat, and *manduā*.

In Bundelkhand the system of cultivation is less varied than in the great plain: there is very little irrigation, and it is not usual to take two crops in the year. The autumn crops are mainly the great millet, cotton, and some of the smaller millets: in the winter the small pulse known as gram or *chanā* (*Cicer arietinum*) is almost universally grown. Formerly large areas were under wheat; but the growth of this crop has fallen off to a great extent since the losses by rust in 1893 and 1894. Another serious loss has been the abandonment of the cultivation of *Morinda tinctoria*, which was widely grown for the scarlet dye (*āl*) which it yields, and which involved such thorough cultivation as to benefit the land materially. The competition of artificial dyes has now rendered the production of *āl* unprofitable.

Population dependent on agriculture.

Nearly 32 million persons were returned in 1901 as dependent on pasture and agriculture, or more than 66 per cent. of the total population. The actual workers included in these groups number 44 per cent. of the male population of the Provinces and 20 per cent. of the female. In addition to these, out of 7·9 million workers who declared their principal occupation to be unconnected with the land, nearly 700,000 recorded agriculture as a subsidiary occupation. Some 23 millions, or about 49 per cent. of the total, were dependent on cultivation as distinct from proprietary rights, and more than 4 millions or 9 per cent. on agricultural labour, one-sixth of these being regularly employed farm servants and their dependants. Women and children take a great part in agricultural labour. In the totals for the Provinces the number of female workers is 44 per cent. of the males, while in the case of agricultural labour it is 80 per cent. Non-workers or

dependants, who include chiefly women and children, form 51 per cent. of the total population, but only 41 per cent. of the population supported by agricultural labour.

The staple food-grains are rice, wheat, gram (*Cicer arietinum*), barley, *jowār* (*Andropogon Sorghum* or *Sorghum vulgare*), *bājra* (*Pennisetum typhoideum*), and maize (*Zea Mays*). **Staple food-grains.**

Rice is grown during the rains, mostly in low-lying heavy clays. The crop is grown year after year on the same land, but a winter pulse is frequently taken in the interval between two rice crops. There are many varieties; but the principal distinction is between those sown broadcast and those transplanted, the latter being the finer kinds. Rice is sown broadcast when the fields have been thoroughly soaked with rain; but in parts of Oudh it is sown as soon as the land can be ploughed and the seed left to germinate when sufficient rain falls. The finer varieties are sown in nurseries, and the seedlings are transplanted into fields on which water is retained by low embankments. Manuring of the fields is not usual; but the seed-beds are as a rule heavily manured. The early varieties are irrigated only in years of drought; the later varieties are usually irrigated after the rains have ceased, especially where there is a water supply from canals. Rice occupies about 14 per cent. of the cropped area of the Provinces (6 million acres in 1903-4), and yields from 7 to 10 cwt. per acre. It is sown in June and July, and harvested from August to December. **Rice.**

Wheat is grown in the winter, usually after a rains crop in the preceding year, so that the land lies fallow for about eleven months, or for six months if the previous crop included *arhar*. It is frequently, but not always, manured with cowdung and house refuse, and is irrigated two or three times in the greater part of the Provinces. It occupies about 18 per cent. of the cropped area of the Provinces (8 million acres in 1903-4), and yields from 7 to 11 cwt. per acre. It is sown at the end of October or the beginning of November, and harvested in March and April. **Wheat.**

Gram is grown in the winter, either alone or mixed with barley; it frequently follows rice or an early autumn crop in the same year. It is sown as a rule without manure or irrigation, but canal water is sometimes applied once or even twice in the western Districts. Altogether gram covers about 13 per cent. of the cropped area of the Provinces (5½ million acres in 1903-4); the yield is not very well ascertained, but may be put at from 7 to 9 cwt. per acre. **Gram.**

Barley. Barley is usually grown mixed with gram or peas, and occasionally with wheat. When grown alone or mixed with wheat the rotation is commonly the same as with the latter crop, but when grown with pulses it frequently follows a rains crop grown in the same year. It is not as a rule manured, and is often grown on unirrigated land; when irrigated it gets as a rule only one or two waterings. Altogether it occupies about 10 per cent. of the cropped area of the Provinces, and yields from 8 to 12 cwt. per acre.

Jowār. *Jowār* is a high-growing millet, sown when the rains break and harvested in November. It usually follows wheat or some other winter crop, and is seldom grown alone except for fodder. The usual mixtures are *arhar* and some of the creeping autumn pulses. The crop is not irrigated, though a watering may be needed to tide over a drought; it is frequently, but not universally, manured. It occupies about 6 per cent. of the cropped area of the Provinces, and yields from 5 to 6 cwt. per acre.

Bājra. *Bājra* occupies the same place in rotation as *jowār*, but is usually grown on the lighter soils and is much less frequently manured. It occupies on the whole about the same area as *jowār*; but its yield is slightly less (4 to 5 cwt. per acre).

Maize. Maize is one of the earliest rains crops sown; in canal tracts it is sown some time before the rains break. It is never irrigated after the rains have begun except in times of actual drought. Manure is usually applied. The crop is grown after almost any winter crop, and having a short season of growth (it is harvested in August) is usually followed by a winter crop in the same year. It occupies nearly 5 per cent. of the cropped area of the Provinces (2·2 million acres in 1903–4). The outturn is ordinarily put at from 8 to 10 cwt. per acre; but this estimate is frequently exceeded.

Subsidiary food-crops. The most important subsidiary food-crop is *arhar* (*Cajanus indicus*), which is almost universally sown mixed not only with *jowār* and *bājra* but also with cotton. It is sown when the rains break, and when the earlier crops have been removed *arhar* alone occupies the field till the end of April: its special importance in rotation is due to its value as a host plant for the nitrogen-fixing micro-organisms. It is rarely grown alone; when so grown its yield may be put at from 6 to 7 cwt. per acre. Numerous small millets are grown in the rains, with the object of replenishing the food-store at the earliest possible moment: they mature usually by the end of August. The most important are *maruā* or *manduā* (*Eleusine coracana*), *sāwān* (*Panicum frumentaceum*), and *kodon* (*Paspalum scrobiculatum*). Taken

together these occupy 5 per cent. of the cropped area; the yield of *maruā* is 9 to 10 cwt., of *sāwān* 6 to 7 cwt., and of *kodon* 7 to 9 cwt. per acre. *Manduā* is the principal food-crop of large tracts in the Himālayas. The creeping pulses *mūng* (*Phaseolus Mungo*), *urd* or *māsh* (*P. radiatus*), *moth* (*P. aconitifolius*), and *lobia* (*Vigna Catiang*) are as a rule grown with *jowār* and *bājra*, though *urd* and *moth* are also sown alone, the former on better, the latter on poorer, soils. These pulses are never irrigated and rarely if ever manured; their yield varies from 3 to 7 cwt. per acre, *moth* (the coarsest grain) being the heaviest crop. The winter pulses besides gram are peas, *masūr*, and *kisāri*. Two species of pea (*Pisum sativum* and *P. arvense*) are largely grown in the east of the Provinces, but are rarely seen in the north and west; they are usually irrigated once, but otherwise are grown like gram. The yield is sometimes as much as 10 cwt. per acre; but 8 cwt. is a more usual figure. *Masūr* or lentil (*Ervum Lens*) is grown mainly in the damper parts of the Provinces, usually after autumn rice; it is rarely if ever manured, and only occasionally irrigated. The out-turn may be put at from 5 to 6 cwt. per acre. *Kisāri* (*Lathyrus sativus*) is grown without manure or irrigation on the worst land in the south and east of the Provinces. Its out-turn has not been determined. Consumption of this pulse, except in small quantities, is known to lead to paralysis. An immense number of varieties of gourds, melons, and cucumbers are grown very widely in the hot season and early rains, forming a valuable addition to the food-supply. Further subsidiary crops are yams, buckwheat, *singhāra* (water-nut), and *brinjāl* (egg-plant). The total average production of food-crops is estimated at a little more than $13\frac{1}{2}$ million tons, and the surplus, after providing for food, seed, cattle, and wastage, at about $1\frac{1}{8}$ million tons.

The principal oilseeds are sesame or *til* (*Sesamum indicum*), several varieties of mustard or rape (*Brassica campestris* and *B. juncea*), linseed (*Linum usitatissimum*), and castor (*Ricinus communis*). *Til* is grown by itself as a rains crop on a large scale in Bundelkhand and in the submontane Districts; but all over the Provinces it is mixed with the ordinary rains crops, each cultivator sowing enough for his own needs. When grown alone it is not manured and yields only 2 to 3 cwt. per acre. The ordinary varieties of rape are almost universally sown in lines through the fields of wheat, barley, and gram. A variety named *lāhi*, grown alone in the submontane tracts, yields about 5 cwt. of seed per acre. Linseed is grown by itself in Bundel- Oilseeds.

khand and in the submontane Districts; in the rest of the Provinces it is grown as a border to wheat-fields or in lines through gram. When sown alone it frequently follows rice, or is grown with very little tillage on land that has been flooded during the rains. It is very rarely manured and irrigation is unusual. The yield is from 4 to 5 cwt. per acre. Castor is grown mainly as a border to sugar-cane or mixed with rains crops.

Fibres. Cotton is by far the most important fibre, occupying 3 per cent. of the cropped area of the Provinces. It is grown as a rains crop, usually without irrigation; but where canal water is available it is sown with irrigation before the monsoon breaks. It is not usually irrigated later unless the rains fail. It is grown after a winter crop and is generally manured. The yield is from 1 to nearly 2 cwt. of lint (cleaned) per acre; but this estimate is very doubtful, as the lengthy period of picking makes it hard to calculate the out-turn. Hemp or *san* (*Crotolaria juncea*) is grown frequently as a border to other rains crops, but its cultivation as a sole crop is extending as it is an excellent preparation for sugar-cane. It is not manured or irrigated: the yield is about 7 cwt. of clean fibre per acre. Roselle hemp (*Hibiscus cannabinus*) is grown almost always as a border to other rains crops; it gives a softer, but weaker, fibre than the first-named plant.

Drugs and stimulants. The opium poppy (*Papaver somniferum*) is grown as a winter crop with high cultivation, usually after maize or some other early rains crop. The land is heavily manured with cowdung, or a top dressing of crude saltpetre is used; irrigation is almost universal, and well water is preferred in consequence of the salts which it contains. The out-turn of crude opium is about 20 lb. per acre. A coarse tobacco is grown round most village sites; it flourishes in highly ammoniated soils and is mostly consumed locally. The out-turn is from 12 to 15 cwt. per acre.

Sugar-cane. Sugar-cane is a very important crop, occupying nearly 3 per cent. of the cropped area. There are three main races: the *ukh*, the *ganna*, and the *paunda* canes. The first are thin hard canes used only for sugar manufacture; the third are thick soft canes used mainly for chewing; while the *ganna* canes are used chiefly for manufacture, but partly also for chewing. The crop occupies the land for periods varying from twelve to eighteen or twenty-four months, according as it follows a spring crop, an autumn crop with a spring fallow, or a spring crop with a year's fallow. It is heavily manured, and only in low-lying lands is irrigation dispensed with. The out-turn of unrefined sugar varies from 15 to 25 cwt. per acre.

Indigo cultivation is rapidly declining. The cultivated area has fallen from 290,070 acres in 1886 to 140,834 in 1903-4. It is sown either in the spring or at the commencement of the rains. In the former case it is ready for cutting in August, in the latter a month later. Indigo.

Among cultivated fruits are the following: mango (*Mangifera indica*), *mahuā* (*Bassia latifolia*), *jāmun* (*Eugenia Jambolana*), pomegranate (*Punica Granatum*), peach (*Prunus persica*), loquāt (*Eriobotrya japonica*), custard-apple (*Anona squamosa*), guava (*Psidium Guyava*), jack-tree (*Artocarpus integrifolia*), tamarind (*Tamarindus indica*), pine-apple (*Ananas sativa*), plantain (*Musa sapientum*), shaddock (*Citrus decumana*), and several varieties of fig, melon, orange, lime, and citron. Vegetables are everywhere cultivated in garden plots for household use, and on a larger scale in the neighbourhood of towns. Among vegetables the following may be mentioned: the egg-plant (*Solanum Melongena*), potato, cabbage, cauliflower, radish, onion, garlic, turnip, carrot, yams, and a great variety of cucurbitaceous plants, including *Cucumis sativus*, *Lagenaria vulgaris*, *Trichosanthes dioica*, *Benincasa cerifera*, *Dolichos Lablab*, and *Trichosanthes anguina*. Fruits and vegetables.

The greater part of the Provinces is highly cultivated, and there is room for considerable extension only in the submontane tracts, which are steadily filling up. Cultivation fell off seriously in the Agra Division about the year 1888, owing to water-logging caused by a cycle of years of heavy rainfall: the drainage system of the country was improved and cultivation has now recovered. Rust and drought in the past decade caused a very serious decrease in the cultivated area of Bundelkhand, but cultivation is now again extending. In the rest of the Provinces the area tilled is not liable to violent fluctuations, but in any season it varies with the rainfall. Extension or decrease in cultivation.

In a large part of the Provinces, seed is ordinarily selected for those crops which require only a small quantity to the acre, e.g. single heads of *jowār* and single cobs of maize are regularly set aside for seed. Selection for crops which require much seed (e.g. wheat) is practised only in the Meerut Division. New varieties of crops have not been introduced to such an extent as to affect materially the agriculture of the Provinces. Oats have secured a place in the rotation near military stations. Potatoes were first introduced in the hills and then spread, about 1839, to the plains; they are grown chiefly in the vicinity of the larger towns: Farrukhābād in particular is noted for this crop. The thick sugar-cane, grown near towns for sale for Improvements in quality.

chewing, is believed to have been introduced from Mauritius. Vegetables are grown by market-gardeners near the towns where there is a European population; and large quantities of seed are purchased yearly from the Government gardens at Sahāranpur and Lucknow. Foreign varieties of many staples have been tried at various times; but, with the exceptions noted above, few have been successful. The present policy of the Agricultural department lies rather in the direction of supplying the cultivators with good seed of the kinds they know, or of kinds known in other parts of the Provinces; thus the soft white wheat of the Meerut Division is now being grown with satisfactory results on considerable areas in the south of Oudh.

Agricultural implements.

The plough used by cultivators is substantially a wedge of wood with an iron cutter in front: its size depends on the strength of the local cattle. It stirs the soil without inverting it, and is well adapted to produce a thorough, but shallow, tilth. Where deep tillage is required the land is usually dug up with a spade. In Bundelkhand a rough bullock-hoe (*bākhar*) is often used in place of a plough for breaking up the soil and eradicating weeds. For harrowing, a heavy beam or cylindrical roller or two parallel beams joined together are used; for weeding and hoeing, the hoe, spade, spud, or sickle is employed. The agricultural implements are of the simplest, and no improved implements offered by the Agricultural department have been accepted to any appreciable extent by the people. Iron cane-crushing mills were introduced as a commercial enterprise and immediately proved acceptable; they have now practically replaced their stone and wood predecessors.

Agricultural department.

Partly owing to lack of agencies for disseminating knowledge, and partly to the need of detailed study of agriculture in its local aspects as a preliminary to undertaking improvements, the Agricultural department, while affording advice and assistance to a very large number of individuals, has not influenced the agriculture of the Provinces as a whole. Model farms are now being started in the Districts. The farm at Cawnpore is used solely for purposes of study and experiments; while the public demonstration farm at Meerut, and the small farms kept up by one or two landholders on lines suggested by the department, influence the cultivators only in the immediate neighbourhood.

The cultivation of tea was successfully established in the first half of the nineteenth century in Dehra Dūn and the Kumaun Division at Government gardens which were sold after ten years' working. The area under tea in 1903–4 was 8,300 acres. Fruit gardens were established at various places in the

Outer Himālayas about 1870, and apples, pears, peaches, and apricots are grown successfully.

Loans are made under the Land Improvement Act (1883) or the Agriculturists' Loans Act (1884), the former being chiefly for wells, tanks, and occasionally protective works, and the latter for purchase of seed and cattle. Interest is charged at $6\frac{1}{4}$ per cent., but in time of famine and scarcity the interest is reduced or remitted altogether. The amounts advanced vary considerably, but loans for seed and cattle are usually treble those for improvements. In ordinary years the former vary from 2 to 6 lakhs and the latter from Rs. 70,000 to Rs. 2,00,000. In the famine year 1896-7 nearly 17 lakhs was advanced for improvements (8 lakhs free of interest), and nearly 23 lakhs for seed and cattle. During the ten years from 1891 to 1900, the advances averaged 2 lakhs and 6 lakhs respectively, while in 1901 the amounts were only Rs. 33,000 and Rs. 78,000. In 1903-4, 1·3 lakhs was advanced for improvements and 1·2 lakhs for seed and cattle. Agricultural loans.

In the cold season of 1900-1 preliminary inquiries were made as to the prospects of co-operative banks, but the movement is still in its infancy. A special officer was appointed towards the close of 1904 to commence organized operations. No reliable statistics are available to show the extent to which the cultivators are indebted. As in most countries they work principally on borrowed capital, but in the Meerut Division a large proportion of the cultivators are practically free from debt. The village bankers are commonly professional money-lenders, but *zamīndārs* and well-to-do cultivators (e.g. Jāts in the western and Kurmīs in the central and eastern Districts) often do a large business. The advances consist largely of grain, which is lent nominally at 25 per cent. interest and sometimes 50 per cent., but this is increased by the method of account: the grain is lent when prices are high and the borrower is debited with the cash value, while it is recovered in kind at harvest time when prices have fallen. Advances are regularly made by sugar-refiners to cultivators of sugar and by indigo planters for indigo. A more important system of advances is that worked by the Opium department, which distributed nearly 215 lakhs in 1903 for opium cultivation, besides nearly a lakh for wells. Agricultural banks.

The only recognized breeds of cattle are found in the sub-montane tracts in the north, and in the Bundelkhand Districts in the south, in both of which areas there is sufficient productive land uncultivated to supply grazing for young stock. In Cattle.

the rest of the Provinces, where population is denser and the land is occupied by crops, pasture is so deficient that cultivators usually buy their working cattle at an age when they can be used at once. The cows are served by any bull that may be available, and no attempt is made to keep the breed pure. The cattle of Meerut and Rohilkhand are large animals, chiefly imported from the Punjab or Rājputāna, good bullocks costing from Rs. 150 to Rs. 200 a pair, and a cow from Rs. 20 to Rs. 40. Passing east down the Doāb, the type deteriorates. In southern Oudh and the eastern Districts the name *dishta* or 'local' is applied to all cattle of no particular breed; they are very inferior and cost from Rs. 20 to Rs. 40 a pair. In the submontane tracts the best-known breeds are: the *panwār* in Pīlībhīt District; the *parehār*, *bhūr*, *khairīgarh*, and *majhra* in Kherī; the *bāngar* in Shāhjahānpur and Hardoī; and the *nānpāra* and *risiā* in Bahraich. The price of these sometimes reaches Rs. 250 a pair. In Bundelkhand the typical cattle are of medium size, hardy and active, and able to subsist on very scanty food. They find a ready market in the Eastern Doāb and Southern Oudh, where grazing and fodder are scarce.

Horses. The only good horses in these Provinces are in the Meerut Division. The country breed has been improved by crossing with English and Arab stallions.

Sheep and goats. There are two kinds of sheep, the white and the black; the latter are the hardier of the two, but the former give finer and longer wool and better mutton. The superior breeds are found in the west, and the best of all across the Jumna. A good goat may fetch Rs. 12, a good sheep as much as Rs. 6; but ordinary prices are Rs. 4 and Rs. 2 respectively.

Pasture-grounds. The only pasture-grounds are the forests in the sub-Himālayan and sub-Vindhyan tracts. Enormous numbers of animals are driven yearly into the Nepāl Tarai during the cold and hot seasons. The better animals are entirely stall-fed, while the inferior bullocks belonging to poorer cultivators live chiefly on what they can pick up on the roadsides, on stubbles, and on barren or ravine land.

Fairs. Large cattle fairs are held at many places in or near the breeding tracts and a few in the Doāb. Among the former, the best known are those at Batesar (Agra), Kosī (Muttra), Golā (Kherī), and Fakhrpur (Bahraich). The latter include Makkanpur (Cawnpore), Nauchandī and Garhmuktesar (Meerut). Trade in cattle is, however, mainly carried on in villages, by regular traders, who buy young stock at fairs or on the breeding-grounds.

The prevalent cattle diseases are rinderpest, haemorrhagic septicaemia, anthrax, and foot-and-mouth disease. Surra and glanders attack horses, but are not very common. The operations of the Civil Veterinary department in respect of surra and glanders are regulated by the Glanders and Farcy Act (1899), and rules made under it. Veterinary assistants, paid by District boards, are employed in the treatment, suppression, and prevention of diseases. They also tour through the District, visiting villages, inquiring about diseases, and giving advice as to the best means of prevention, treatment, or suppression. There are about forty-three veterinary assistants employed in these Provinces, and it is proposed ultimately to raise their number to ninety-six, i. e. two for each District. The Veterinary Inspectors, besides supervising the work of the veterinary assistants, are also deputed to various Districts in connexion with serious epidemics. There were only three in 1904, but their number will ultimately be raised to nine, i. e. one for each Division. Cattle diseases and the Civil Veterinary department.

Of the strip of land at the base of the Himālaya called the Bhābar alone can it be said that without irrigation there could be no cultivation, though it might be added that in the dry western tracts there would be little cultivation of value. Generally speaking, irrigation is required for certain crops in all years and for all crops in years of drought. Garden crops and hot-season crops require constant irrigation. Poppy and sugar-cane are irrigated many times on all except damp, low-lying soils; wheat is generally irrigated twice, sometimes three or four times. Nearly all crops are irrigated in canal tracts. Autumn crops, especially rice, are irrigated when there is a break in the rains, particularly where water can be obtained from canals or *jhīls*; and temporary wells are dug in large numbers in most places on emergency. In the heavier soils unmanured fields are irrigated; in the lighter soils only the manured fields as a rule. Irrigation.

The principal irrigation works of the Provinces are four canals, two of which, the UPPER and LOWER GANGES CANALS, are drawn from the Ganges, while the other two, the EASTERN JUMNA and ĀGRA CANALS, are drawn from the Jumna. These are all classed as 'major' works. The first three serve the DOĀB from the southern part of Sahāranpur to Allahābād, and the Agra Canal irrigates in these Provinces the Districts of Muttra and Agra south and west of the Jumna. These four systems included in 1904, 1,383 miles of main channel and branches, out of a total of 1,551 in the Provinces, and Canals. General description.

7,066 miles of distributaries out of a total of 8,081, while they irrigated about 93 per cent. of the area supplied by canals. In the south-west of the Provinces the Betwā and Ken Canals, protective works drawn from the rivers of those names, supply parts of the Districts of Jhānsi, Hamīrpur, Jālaun, and Bāndā, while small areas in Jhānsi and Hamīrpur are irrigated from reservoirs which were made by damming up valleys many hundred years ago. The 'minor' works include some small canals in Dehra Dūn, Bijnor, Bareilly, Pīlībhīt, and Nainī Tāl.

Revenue. Charges for irrigation from Government canals are levied by (1) occupiers' rates, and (2) owners' rates. The former vary according to the crop; and where it is necessary to raise the water the rates are usually half of those charged where the water can flow direct on to the land. On the four 'major' works and on the Betwā Canal the 'flow' rates vary from Rs. 2 per acre for autumn crops (excluding rice, indigo, and cotton) to Rs. 6⅔ for sugar-cane and rice, except on the recent extensions of the Lower Ganges Canal, where the highest rate is Rs. 10 for sugar-cane. On the Betwā Canal the rates are halved for certain soils, and a preliminary watering for spring crops which are not irrigated again is allowed at R. 1 for 'flow.' The rates are lower on other canals. Owners' rates, amounting to one-third of the occupiers' rates, are levied on the proprietors of all land in villages into which irrigation has been introduced since the last revision of settlement, and are thus a kind of charge for the improvement effected at the cost of Government. The rate is one-sixth for the Agra Canal in Muttra and Agra Districts, but no rate is charged on the Betwā Canal. The area irrigated is measured by an *amīn* (native surveyor) of the Canal department in company with the village *patwāri*, and a statement of the demand is sent to the Collector. The rates are collected by the *tahsīldārs* in the same manner as land revenue. Arrangements are often made by which the *lambardār* of a village collects the rates due from the tenants in that village, and receives fees for prompt collection.

The receipts from all canals increased from an average of 60 lakhs in 1881–90 to 80 lakhs in 1891–1900, and in 1900–1 and 1903–4 amounted to nearly 100 lakhs. Working expenses rose during the same decennial periods from an average of 24 to 30 lakhs, and were nearly 35 lakhs in 1900–1 and also in 1903–4. The percentage of net profits on capital outlay, including simple interest, has increased from 0·98 to 2·04 and 3·48. The Eastern Jumna Canal earned as much as 22 per cent. in 1903–4. The Betwā Canal showed a loss of 3·2 per cent. in the same year.

The net profits from all canals in 1903–4 amounted to 63 lakhs, and, deducting interest on capital outlay, to 29 lakhs.

Tanks.

The only large artificial lakes used for irrigation are those in Jhānsi and Hamīrpur Districts, which were constructed under native rule, as ornaments to temples on their banks, by damming up valleys. These lakes cover an area of about 6,000 acres, and have 71 miles of distributaries which irrigate about 2,400 acres. The irrigation channels from them are now maintained by the Canal department. The word 'tank' is usually applied in these Provinces to the very small basins excavated in level ground, which are referred to below.

Indigenous methods. (*a*) Wells.

Wells for irrigation are sometimes lined with brick, in which case they are called *pakkā*, and sometimes unlined, when they are called *kachchā*. The former are made by digging a hole and building a cylinder in it, which is sunk by weighting the top and excavating earth from the centre. *Kachchā* wells are partly lined, where they pass through sand, with basket-work, twisted bands of grass, *arhar* stalks, *jhau* (tamarisk), and occasionally wooden planks. Water is raised from the deeper wells in leathern buckets with a capacity of 18 to 25 gallons. The bucket is attached to a rope, passing over a pulley, drawn by bullocks which walk down a slope when drawing up the bucket. In the Meerut and part of the Agra Divisions two pairs of bullocks are used with a single bucket, one pair passing down the slope as the other pair returns. The Persian wheel is used only in parts of Jhānsi and Sahāranpur. In places where the water is less than 12 or 14 feet below the surface, especially in the sub-Himālayan Districts and the low land on river banks, a lever or *dhenklī* is used, consisting of a long pole supported on a pivot near one end. The pivot is fixed in two supporting pillars of mud or wood, and an earthen pot is attached by a rope to the longer end of the pole, while the short end is weighted with earth. In place of the *dhenklī* a pulley is sometimes used, over which passes a rope with an earthen vessel at each end. A *pakkā* well costs about Rs. 200 for a depth of 30 feet, if made for one bucket, and about Rs. 100 more for each extra bucket used. *Kachchā* wells may be made at rates varying according to the depth from Rs. 2 or Rs. 3 to Rs. 10 or Rs. 12. The area irrigated in a day by two men and a pair of bullocks varies from about $\frac{1}{6}$ acre at a depth of 20 feet to $\frac{1}{8}$ acre at 40 feet, and $\frac{1}{8}$ acre can be irrigated by two men working a *dhenklī* at a depth of ten feet.

(*b*) Tanks and streams.

In the Benares and Gorakhpur Divisions, and in Eastern Oudh, the heavier rainfall and tenacity of the soil have led to

the construction of small tanks of a few acres each, which are used for irrigation; where possible, the water in natural depressions and marshes called *jhīls* is also used. In the sub-Himālayan Districts small streams are dammed, and water-courses led off from them, and considerable works of this kind have been made by European landholders in Bastī and Gorakhpur which irrigate about 55,000 acres. The usual method of irrigation from tanks, *jhīls*, and rivers, as well as from canals where the water is below the surface-level, is by the swing-basket. This is a long shallow basket of plaited strips of bamboo (*berī*) or leather (*banka*), with two strings attached to each end held by two men, who dip it in the source and throw the water on a higher level. In the eastern Districts water is not always allowed to run direct on the land, but is scattered over it with a kind of wooden shovel. In rice land rain-water is carefully held up by small embankments in the fields.

Importance of different sources.

Roughly speaking, in the Districts served by canals, half the area irrigated receives water from canals, and the greater part of the remainder from wells. In the Districts where there are no canals, wells serve from four-fifths to five-sixths of the irrigated area. In Bastī, Gorakhpur, Azamgarh, Sītāpur, Bahraich, Bāra Bankī, Fyzābād, Rāe Barelī, Sultānpur, and Partābgarh the area irrigated from tanks and *jhīls* varies from three-fourths to more than as much again as the area irrigated from wells. The area irrigated directly from rivers, as distinct from regular canals, is not important except in the submontane tract.

Fisheries.

Fish are plentiful in all parts of the Provinces, as all the rivers and most of the numberless small tanks and lakes are well stocked. There is no control over river fishing, except in the case of a few streams and hill lakes which have been preserved. Landholders sometimes derive a certain amount of income from fishing rights in small tanks, and where this is considerable it is taken into account in assessing land revenue.

Rents.

There are three common forms of rent: distribution of threshed grain, generally called *batai*; appraisement of the standing crops, generally called *kankūt*; and cash-rents. There are unimportant local combinations of cash- and grain-rents in exceptional areas, and certain valuable crops carry special rates (*zabtī*). Generally the rents are the result of custom and competition (according as population is sparse or dense) under the general influence of legislation.

Batai.

The arrangements for *batai* are extremely complicated, owing to the varying shares of the village servants and others in the grain-heap. In the main division the landlord usually gets

one-third, two-fifths, or one-half; but privileges are given to high-caste tenants in many places, especially in Oudh, and to all tenants in backward tracts. Where population is sparse and tenants are in demand the share of the tenants is larger; as population fills up the share of the tenant decreases.

Kankūt is of two kinds. Under both the produce of the standing crops is estimated, with a small deduction for village dues, and the landlord's share is calculated, and either paid in cash (at a valuation slightly above harvest prices) or delivered in grain. The former system is called *darkatti*. *Kankūt.*

Sometimes *kankūt* is adopted for the autumn and *batai* for the spring harvest. This avoids delay in dividing the principal food-crop, and in the case of *darkatti kankūt* arrears can easily be realized in kind in the spring. Sometimes there is a fixed rate of so much grain in weight per *bīgha*. Sometimes (as along the Nepāl boundary) there is a system under which a low cash-rent is fixed, deductions being made for failure in the harvests. Hybrid systems.

Batai is an unprogressive and wasteful system. It involves on the one hand delays, injurious to the produce and vexatious to the tenantry, and on the other hand pilfering by the tenantry on large estates. *Kankūt* involves uncertainty of estimates as well as uncertainty of season, and is open to abuses. There is a well-known saying of Alamgīr: *Batai lutai, kankūt badast-i-langot-bandha. Jama khūb ast.* '*Batai* spells robbery of the landlords; *kankūt* puts power in the hands of low fellows; cash-rents alone are satisfactory.' This is true to-day. In backward and precarious tracts, and where the tenantry are poor, grain-rents seem to be necessary; but as population fills up, cash-rents take their place. Whether or no money-rents date from the increase in imports of silver into India, it is a fact that now the main agent of conversion is the growth of population. The cultivation of produce-rented villages is inferior. The cultivators have little inducement to work their fields fully, as the landlord will reap a large portion of the resulting produce. As long as the holding is large, the cultivator secures a fair sustenance on careless cultivation. When the holding is small, intensive cultivation becomes necessary. As the holdings decrease, cash-rents are imposed. They represent a reduction in the share of the produce, but they are profitable in the long run to the landlord. Landlords often reduce holdings before they convert to cash-rents, or even before enhancing existing cash-rents. On the whole, produce-rents are steadily giving way to cash-rents. Transition to cash-rents.

Cash-rents.

Cash-rents depend on many historical circumstances: the state of prices and degree of prosperity of the tenant at the time of conversion, the character of the landlord, and so on. Over large areas the general level of the cash-rents undoubtedly follows the soil; but in individual villages the rates yield to many cross influences, of which the following are natural and important:—

(*a*) *Caste.*—High-caste tenants are usually privileged. In Oudh and the eastern Districts the privilege may be as much as 4 annas in the rupee (one-fourth). In the western Districts it is less or even non-existent, particularly where Muhammadan invasion or settlement has strongly influenced tenures.

(*b*) *Circumstances of the landlord.*—The owners of large estates are more generous to their tenants than small proprietors, who indeed are almost compelled by their poverty to exact the uttermost farthing. The difference is particularly marked in Oudh, where the rents of *talukdārs* are about 20 per cent. lower than those of poorer proprietors.

(*c*) *The pressure of population.*—The real determinant of rental incidence is, however, the pressure of the population as evidenced by the demand for land. When land is in demand rents steadily rise, and holdings as steadily decrease in size. Intensive cultivation seems to repay the tenants, who are by no means worse off where their holdings are small. Arthur Young's theory that a rising rental stimulates industry and so produces prosperity finds much support in the economic phenomena of these Provinces.

Influence of prices.

Prices of course affect rents where land is in demand, but only to a limited extent. The natural process of rent enhancement is not to raise rents all round, but to raise the rents of the inferior towards the rates of the superior lands. No feature of the rental economy of these Provinces is more marked than the resolute refusal of the people to admit that a rise in prices is a ground for enhancement of rent. In many tracts where rents are raised, the enhancement takes the form, not of a rise in the rate per *bigha*, but of a reduction in the size of the *bīgha*. Prices have absolutely no effect on rent rates in backward tracts where population is thin; their only effect is to influence the area under cultivation. Where population is dense rents rise independently of prices; but in the long run prices have some influence. Elaborate inquiries between 1870 and 1880 showed the extremely loose connexion between prices and rents.

Legislative action.

Legislative action has disturbed the natural development of rent chiefly by arresting enhancement of the rents of occupancy

tenants. The rents of occupancy and non-occupancy tenants in rupees per acre compare as follows:—

	Division.								Province.		
	Meerut.	Agra.	Rohilkhand.	Allahābād.	Benares.	Gorakhpur.	Lucknow.	Fyzābād.	Agra.	Oudh.	United Provinces.
Occupancy rents	4·7	4·2	3·9	3·9	3·9	3·7	2·6	2·9	4·1	2·6	4·0
Non-occupancy rents	6·9	4·8	4·0	3·1	3·4	3·4	5·5	5·5	4·2	5·5	4·7

Although in theory occupancy tenants in the Province of Agra are not privileged as regards the rate of rent, the difficulties thrown in the way of enhancement by the law and the action of the courts have kept occupancy rentals low in the Meerut and Agra Divisions, particularly where canal irrigation is not used. Some allowance has, however, to be made for the fact that the same tenant sometimes holds under the same landlord in both occupancy and non-occupancy right, paying for the latter in a joint account an enhancement which ought to have been laid partly on the former. In Oudh occupancy tenants are a small privileged body of ex-proprietors. The Agra law puts no limit on enhancement except the market rate. The Oudh law protects every tenant (not being an occupancy tenant) from enhancement for seven years, and at the end of that period permits enhancement of only one anna in the rupee ($6\frac{1}{4}$ per cent.).

Field and lump rents.

In the west of the Provinces each field often bears its own rent; in the east and in almost the whole of Oudh the rents are lump rents on the holdings. Where the natural soils vary greatly, the rents tend to follow the natural soils. Where the soils are fairly homogeneous, rents vary chiefly according to the distance of the fields from the village site. The fields near the village nearly always pay high rents; they receive more attention, getting better cultivation and manure than the outlying fields. In the Meerut Division, owing to careful cultivation the position of fields is of less importance than the quality of their soil.

Rates of rent.

The all-round average incidence of the rental of non-occupancy tenants given above represents the average rent for average crops. Rents sometimes vary in the same villages from R. 1 in outlying poor soil to Rs. 100 per acre in rich garden cultivation near the site. Generally rents (in rupees) may be said to range as in the table on following page.

Within and beyond these limits there are, of course, infin variations.

Special rents.

Tobacco, poppy, sugar-cane, and garden-crops pay spec rates, which range from about Rs. 5 or even less per ac in the submontane Districts to Rs. 150 per acre near lar towns, where night-soil and sweepings are available as manur

	Division.							
	Meerut.	Agra.	Rohilkhand.	Allahabad Doāb.	Allahabad Bundelkhand.	Benares.	Gorakhpur.	Oudh
First-class land near village site	15	11	10	12	4	12	10	15
Poor outlying land	2·5	1·5	1·5	2	1	2	1·5	1·5

Cotton, hemp, &c., pay special rates, but these differ but little from those of ordinary land.

Wages.

The returns of wages are known to be so inaccurate that detailed figures are misleading. In the greater part of the Provinces agricultural labourers are paid wholly or partly in kind. The wages, when paid in kind, are either a certain amount of grain, or, at harvest-time, a certain proportion of produce from the field. Whether the wages are paid in cash or in kind, distinct variations can be traced in the amounts received in different parts of the Provinces, the rates being highest in the west and lowest in the south and east. In the western Doāb the value of the daily wage ranges from 2 to 3 annas. It varies from 1¼ to 2¼ annas in the eastern Districts where population is congested, and in Bundelkhand where labour is inefficient. From very imperfect data there is some reason to think that these customary rates have an upward tendency, most marked near the large cities. The actual wage, however, constantly fluctuates, within the limits stated above, the determining factor at any particular season being the agricultural conditions then prevailing. Out of 2·6 million agricultural labourers in 1901, 400,000 were recorded as in permanent employ. These are usually fed and clothed by their employers and their wages scarcely vary. Village artisans are few in number; their services are remunerated by fixed payments which are more or less regulated by custom, and they receive certain amounts of grain or other food each harvest.

It is a matter of common knowledge that the wages of skilled labour have risen greatly as a consequence of the

extension of railways and industries. Some information as to the rates paid will be found on pages 83, 84. Domestic service is more highly remunerated than it was ten years ago, and wages are steadily rising.

The history of prices in these Provinces is similar to the history of prices throughout India. During the first half of the nineteenth century there were violent oscillations according to the seasons in particular localities. A good crop meant low prices, a bad crop meant famine prices. And at distances which are now considered small there were most extraordinary variations[1]. In those early days, also, there were great discrepancies between harvest prices and market prices. This state of things continued more or less until 1865. By that time communications had improved, and prices became steadier. There were still, however, marked variations in different places, and the difference between market and harvest prices also was considerable. A general rise in prices began in these Provinces, as elsewhere in India, about 1886 and 1887. The causes of that rise are still matter of discussion. A more remarkable feature has been the equalization of prices, which may be said to have commenced after the Mutiny, and to have been largely due to improved communications, especially railways. Prices.

Table V (p. 147) shows the variation in prices of staples in seers per rupee during the thirty years 1871–1900, the famine years of 1878, 1896, 1897, and 1899 being omitted. It will be seen that prices have risen steadily except in the case of salt, but the abnormal conditions of recent years vitiate any definition of the present tendency or prediction as to the probable course of prices generally. At the present time (1904) prices are easier than they have been for years. The highest prices known within the previous 30 years were in 1897, when the weight in seers of grain to be purchased for a rupee was: wheat 9 to 10, *jowār* 11 to 13, gram 9 to 10, barley 11 to 13, and rice 8 to 9. The striking feature in a famine year is the approximation of the prices of the inferior grain staples to those of the better class.

The most prosperous parts of the Provinces are the Meerut and Kumaun Divisions. In the latter, there is no such individual as a landless day-labourer, while in the former the canal system ensures the cultivation of large areas, even in Material condition of the people.

[1] An interesting account of prices will be found in Mr. T. Morison's article on 'The instability of prices before 1861' in the *Journal* of the Statistical Society, September 30, 1902.

a year of drought, and thus provides a constant demand for labour. The standard of comfort is lowest in the eastern Districts, where the pressure on the soil is enormous, and in BUNDELKHAND, where the vicissitudes of the seasons cause excessive variations in the area cultivated. There is little difference in dress between the small cultivator and the labourer, except that the clothes worn by the latter have to last longer, and he has nothing warm in the cold season except a patchwork quilt of rags. The houses of both classes are of mud, but the cultivator will have several rooms round a small courtyard, while the labourer and his family live in a single room. No furniture is used by these classes beyond a bedstead and large jars or receptacles made of mud which hold clothes or grain, and the labourer generally lacks even these. The cultivator has a number of brass, copper, and iron cooking vessels worth Rs. 5 to Rs. 10, no table utensils being required; but the labourer has to be content with one or two. In the matter of food the cultivator can afford vegetables and superior staples, while the labourer has to live on the grain he has received as wages, or the cheapest available. A Musalmān will have fewer cooking utensils than a Hindu, but will also own a few plates and cups of rough glazed pottery. In the case of a clerk earning, say, Rs. 40 a month, the standard of living is distinctly higher. His house is usually of brick, and costs Rs. 2 to Rs. 4 a month instead of being rent-free. The furniture includes two or three cane stools or chairs, occasionally a table, and some wooden boxes for clothes. The ground is covered with a small cheap carpet, and a few rugs are used for sitting on and as bedding; while the cooking utensils are worth Rs. 20 to Rs. 40. Small payments of Rs. 1 or Rs. 2 a month are made for the services of sweeper, water-carrier, barber, and washerman, instead of these being village servants. A clerk may spend from Rs. 12 to Rs. 30 in a year on his own clothes, which are of finer quality than those of the cultivator, and tend towards an imitation of the European style.

Forests[2]. The forests in the United Provinces may, broadly, be divided into the upper, middle, and sub-Himālayan, and those situated in the plains.

Upper Himālayan. The first lie mainly in the Jaunsār Bāwar *pargana* of Dehra Dūn District, in the tracts leased from the Tehrī State, and in the protected forests in the higher hills of the Kumaun Division. The most important species are *deodār* (*Cedrus Deodara*), from 6,000 to 8,500 feet elevation; *kail* or blue pine (*Pinus*

[2] From a note by Mr. J. W. Oliver, I. F. S.

excelsa), 6,000 to 8,500 feet; *rai* or spruce (*Picea Morinda*), 7,000 to 11,000 feet; *morinda* or silver fir (*Abies Webbiana*), 8,000 to 10,000 feet; yew (*Taxus baccata*), 6,000 to 10,000 feet; together with oaks, maples, and various other broad-leaved species. The box-tree (*Buxus sempervirens*) also occurs in a few localities, though in no very great abundance.

Middle Himālayan. The next class occupies the middle slopes and valleys in Jaunsār-Bāwar, the Tehrī leased tracts, and the Kumaun Division. The most important species are the *chīr* or long-leaved pine (*Pinus longifolia*), 2,000 to 6,500 feet, which is found unmixed over very large areas; oaks, of which the commonest is *Quercus incana*; *Pistacia integerrima*, a very valuable furniture wood, but rare; and the hill *tūn* (*Cedrela serrata*).

Sub-Himālayan. The third division extends in a continuous belt along the lower hills from the Jumna on the west to the Sārdā river on the east, and thence into Bengal and Assam. These forests for the most part consist of *sāl* (*Shorea robusta*), associated with a relatively small proportion of other trees, of which the most important are—*Terminalia tomentosa* and *T. Chebula*, *Adina cordifolia*, *Anogeissus latifolia*, *Lagerstroemia parviflora*, *Acacia Catechu* (*khair*), *Dalbergia Sissoo* (*shīsham*), *Cedrela Toona*, *Eugenia operculata* and *E. Jambolana*, *Schleichera trijuga*, *Ougeinia dalbergioides*, *Albizzia procera*, *Mangifera indica* (mango), and *Stereospermum suaveolens*. *Sāl* of marketable value occurs in the outer hills up to an elevation of 3,000 feet, but usually ceases to be the predominating species above 2,000 feet. Bamboos (*Dendrocalamus strictus*) are also found on the lower hills, mixed with *sāl* and other species named above, but attain their greatest development between the Ganges and the Kosi rivers. Bamboos also occur in the mixed forests of Bundelkhand.

Plains forests. The plains forests lie below the foot of the Himālayas, between the Jumna and the Gandak rivers, attaining their greatest width in Oudh. They comprise large tracts of pure *sāl* in the better-drained portions, *khair* and *shīsham* on the land adjacent to rivers, and intermixed with these areas containing *sāl*, *Adina cordifolia*, *Terminalia belerica*, *Bombax malabaricum*, *Albizzia*, *Odina Wodier*, *Lagerstroemia parviflora*, *Zizyphus Jujuba* and *Z. xylopyrus*, *Mallotus philippinensis*, *Holarrhena antidysenterica*, &c. The forests in Bundelkhand yield only small timber suitable for local requirements. *Bassia latifolia* (*mahuā*), *Buchanania latifolia*, and *Diospyros tomentosa*, which are valuable for their fruits and flowers, are common all over the country.

Administration.

For administrative purposes the forests are divided into three circles, each under the control of a Conservator[1]. These, again, are subdivided into divisions, under Deputy, Assistant, Extra Deputy, and Extra Assistant Conservators; and the divisions into ranges under the charge of Rangers or Deputy Rangers, assisted by beat officers (foresters and forest guards). The Imperial Forest School at Dehra Dūn has been established since 1880 for the education of the Provincial and Upper Subordinate services of India and Burma; students from Native States and private students are also allowed to attend. The forests of the School Circle, one of those mentioned above, have been specially set apart for the education of the students. In 1906 a scheme was sanctioned to provide a research institute in connexion with the school.

The forests in 1904 were classified as follows:—

	Central Circle.	Oudh Circle.	School Circle.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Reserved forests	1,888	1,292	715	3,895
Leased "	...	...	153	153
Protected forests managed by the Forest department	30	...	...	30
Protected forests managed by District officers	9,363	...	...	9,363
Unclassed forests	30	34	13	77
Total	11,311	1,326	881	13,518

Reserved and leased forests.

The leased forests comprise 141 square miles of *deodār* and *chīr* forests leased for a term of twenty years from the Tehrī State on payment of a rent equal to 80 per cent. of the net revenue; and 12 square miles held on perpetual leases at a fixed annual rent from the Thākurs of Rawain and Dhādi, who are feudatories of the Jubbal State in the Punjab.

Working-plans.

The 'reserved' and leased forests are, with the exception of those in Bundelkhand and a few outlying areas, all managed in accordance with sanctioned working-plans under various systems of high forest management, except where there is a large demand for small timber and poles, in which case the systems of coppice and coppice with standards have been adopted. The small areas not under working-plans are worked under annual plans of operations. In nearly all forests the quantity of timber

[1] In 1905 the Director of the Forest School, Dehra Dūn, ceased to exercise administrative powers, and the three circles were redistributed into two, called respectively the Eastern and Western.

that may be removed annually is marked and sold by auction to contractors, who pay either a lump sum for the whole produce of the *coupe*, or a lump sum *plus* a royalty on the quantity of produce removed, the object in the latter case being to induce the purchasers to remove inferior timber as well as the better classes. Bamboos are disposed of under the same system, the blocks being usually worked every second year. Grass and minor produce are farmed out to contractors over defined areas. Grazing is allowed at certain rates up to a fixed maximum per head of cattle in such blocks as have been specially appointed by the forest settlements for this purpose. Exploitation of timber by Government agency is practised on a large scale only in the *deodār* leased forests, where, owing to the necessity of employing special means of transport, such as slides, tramways, and sledge roads, with which the ordinary contractor is not familiar, this form of working is more economical. Departmental working is also employed for the supply of fuel and timber to cantonments in the hills.

Relations with the people. The relations of the Forest department with the people are controlled by the revenue officers with the Commissioners at their head, and in the event of the Commissioner and Conservator differing, the subject is referred to the Local Government for decision. The surrounding population generally live on very good terms with the Forest department, from which they derive many substantial benefits. The rights and privileges of the people in regard to forest produce and pasture are regulated by the various forest settlements, and most of the villagers in the neighbourhood of the forests obtain an abundant supply of fuel, poles, grass, and grazing, either free or at privileged or agricultural rates. They also furnish most of the labour employed by the department. In some cases, where there are no rights and there is a demand for produce in small quantities, the purchasers of *coupes* are bound under their contracts to sell the produce extracted at fixed rates to any local consumer who may require it. The value of produce given away free and the loss on produce sold at reduced rates amounted in 1902–3 to nearly 2 lakhs of rupees.

Protected forests. The 'protected' forests comprise the whole of the unmeasured lands in the hill *pattīs* in Nainī Tāl, Almorā, and Garhwāl. The more populous portions carry but little forest, but elsewhere there are good forests of *chīr*, oaks, and other species, with fir and spruce at the higher elevations. With the exception of 30 square miles under the control of the Forest department, these forests are administered in the interests of the

people by the District officers under rules sanctioned by Government. The revenue derived from the sale of produce to public departments and traders, and from grazing dues, is credited to the Forest department, the expenditure being debited to the same head. The annual revenue averages about Rs. 33,000, and the expenditure Rs. 17,000.

Fuel and fodder reserves. There are no areas specially set apart as fuel and fodder reserves, the wants of the people being met generally from areas left open under the forest settlements for the exercise of such rights. In other cases provision for the necessary supply is made in the working-plans. Under the orders of Government the forests may be thrown open to the people in times of scarcity and drought, for the free extraction of edible produce, and to free grazing or grazing at reduced rates for those who enjoy no rights under the forest settlements, the open areas being utilized to their full extent, and the closed portions also thrown open, if necessary, in seasons or localities of exceptional distress. Statements showing the pasturage available in the forests are drawn up annually in accordance with the famine code and submitted to the Director of Land Records and Agriculture, who maintains registers of cattle and pasturage.

Fire protection. In 1904, out of a total area of 4,078 square miles of 'reserved,' leased, and 'protected' forests under the management of the Forest department, 3,211 square miles, or nearly 80 per cent., were under protection from fire, and the failures amounted to only 146 square miles, or less than 5 per cent. of the area under protection. The expenditure incurred was Rs. 62,000, or Rs. 19 per square mile protected.

Survey. The whole of the forests has been demarcated and mapped, with the exception of some inconsiderable areas recently acquired, which are now under survey.

Special plantations. The only plantations of a special nature are the Rānīkhet and Chakrātā orchards and nurseries. These have been maintained for many years with the object of promoting fruit-growing, which is now an assured success. Two small plantations of imported chestnut-trees were also established in 1900, in the Nainī Tāl and Jaunsār divisions.

Receipts and expenditure. The gross Forest receipts rose from an average of 13½ lakhs in 1881–90 to more than 15 lakhs in 1891–1900. They amounted to 15⅝ lakhs in 1901 and exceeded 22½ lakhs in 1903–4. The expenditure in the same periods has varied little, being about 9 or 10 lakhs yearly.

Mines and minerals. Coal. Peat has been found in the Upper Doāb, and coal is known to exist in Southern Mirzāpur. In 1896 a mine was opened in

what has been variously called the Kota or Singraulī-Jwālāmukhi coal-field, but the works were closed after 1,000 tons had been extracted, as the operations did not pay.

Metals.

Iron and copper are found in the Himālayan Districts, and the mines were formerly of importance; but the increased difficulty of working copper, as veins became exhausted, has led to the closing of most of the mines, and the ironworks are very small and supply only the immediate neighbourhood. In 1903-4 leases for mines worked after the native fashion were issued for eight iron mines and one copper mine; but the royalties collected amounted to only Rs. 116. Iron was once worked by a company at the foot of the hills near Nainī Tāl, but the operations were not a commercial success. A prospecting licence for a large area in Dehra Dūn has recently been granted, and an English company has obtained a mining lease for copper in Kumaun. Gold is obtained in minute quantities by washing in some of the rivers in, or near the foot of, the hills.

Limestone.

Limestone is found in the Himālayas, but is only used locally for making lime owing to the difficulty of transport. In most parts of the plains *kankar*, which is a form of calcium carbonate, is found in beds a few feet below the surface and is used for metalling roads and making lime. Usually the *kankar* is in small nodules, but sometimes it occurs in a more solid form and can be cut in blocks for building.

Stone.

Stone is largely quarried in Mirzāpur District in what is called the Stone *Mahāl*, which extends over 160 villages with 9,529 quarries, of which 1,382 are working. The stone is a fine sandstone, largely used for dock-building, for municipal drains and private houses, while stone ballast is displacing *kankar* or nodular limestone on railways. Curry-stones, hand-mills, potters' wheels, stone vessels, and other articles are also made in the District and exported. The Stone *Mahāl* is Government property, but is worked by private individuals, who pay duty at rates varying from 4 annas per 100 cubic feet for ballast to 1 anna per cubic foot for cut stone. In 1903-4 the gross income from duty was Rs. 88,000 and the expenditure on staff and roads Rs. 46,000. Small quantities of granite have been obtained from Bāndā, Mirzāpur, and Almorā, of slate from Garhwāl and Nainī Tāl, and of soapstone from Jhānsi and Hamīrpur. Stone is also worked in Agra and Muttra Districts and in Bundelkhand, while it is used more commonly than brick in the Himālayan Districts.

Salt and saltpetre.

There are no mines for salt in the United Provinces, but salt

is sometimes manufactured on a small scale during the process of refining saltpetre, which is prepared from nitrous earth by lixiviation. The purified salt is chiefly consumed in the area east of Allahābād, and in parts of Oudh it is employed to adulterate imported salt. In Alīgarh, Agra, Etāwah, and Mainpurī the impure salt or *sitta* is used for curing dried meat for export to Burma. Salt is also used in the manufacture of soap, and for curing hides and skins. Carbonate and sulphate of soda are prepared, by indigenous methods, from the saline efflorescences called *reh*, which are found in barren land in many parts.

Arts and manufactures. Hand industries. Cotton.

Cotton is ginned and spun with rude appliances as a home industry all over the Provinces. Weaving is carried on in most Districts on hand-looms of simple construction. In 1901 the number of persons supported by industries in connexion with cotton was over 1¼ millions, of whom nearly 1 million were dependent on weaving, 140,000 on spinning, and 136,000 on cleaning, pressing, and ginning. The largest industry is in Azamgarh District, where there are about 13,000 looms; but there are also important centres in Fyzābād, Alīgarh, Etah, Muzaffarnagar, and Sahāranpur. The commonest production is a plain uncoloured material used for clothing, and often woven of the exact size required for a loin-cloth (*dhotī*) or sheet. Coloured fabrics, including checks and stripes, are also produced, and machine-spun yarn is preferred for these. Muslin is made in small quantities in Lucknow, Benares, Bulandshahr, Fyzābād, Jaunpur, Mirzāpur, and Rāe Barelī. The principal weaving castes are the Korīs (Hindus), who numbered nearly a million in 1901, and the Julāhās (Musalmāns), who were 900,000 strong. Both hand-spinning and hand-weaving have suffered from the competition of the mills, especially the former, but the rate of decline is said to have lessened during the last twenty years. Machine-woven cloth is better in appearance than the material produced by hand, but the very defects of roughness and unevenness in the latter make it preferred for quilts and the like, and it is more durable.

Silk.

Experiments in the production of mulberry silk have been carried on for many years without much success. In Mirzāpur District wild cocoons of the *tasar* moth are collected, and worms bred from them by the jungle tribes. Since the famine of 1896 the out-turn has been only about 2 million cocoons, or half of the former production.

Benares is the chief centre of the silk-weaving industry, and in 1899 the capital invested in that District was estimated at 30

lakhs. Some work is also turned out at Agra and Farrukhābād, and in Azamgarh and Jhānsi Districts. At Benares the chief fabrics made are *kincob* (*kamkhwāb*) or brocade, which is adorned with gold and silver threads, and many varieties of piece-goods and articles of clothing. In Azamgarh mixtures of silk and cotton are more common, and good satin is also produced. Silk braid is made in many places. In 1901 there were 13,500 persons employed in silk manufacture, &c., of whom 12,300 were in Benares.

Embroidery in silk or cotton on muslin is called *chikan*, and Lucknow city is famous for this industry, which is carried on by the more respectable classes of poor people, especially Muhammadans. Handkerchiefs and other articles for personal use or wear are the chief productions, and the industry is probably increasing. Embroidery in gold and silver on velvet, silk, crape, sarcenet, &c., was formerly prepared for the native demand at Agra, Benares, and Lucknow, the out-turn being chiefly saddle-cloths, covers for cushions, elephant-housings, caps, coats, and other articles of clothing. Slippers, table-covers, &c., are now produced for the European market. Embroidery.

In every District there is a small local trade in blankets. These vary in quality, the best being produced in Bahraich and Muzaffarnagar, but all are of coarse brown stuff, very different from the European style. In the hills many kinds of woollen cloth are produced in small quantities, almost entirely for local use. Goats' hair is made into ropes and sacking, and in the Himālayas and Mirzāpur into coarse cloth. In 1901 there were 50,000 persons supported by wool industries, but many of the persons recorded as sheep- and goat-breeders and shepherds (120,000) are also employed in blanket-making. Wool.

Cotton carpets or *darīs* are woven on a large framework, the warp being arranged horizontally. Stripes form the usual design, but other patterns are also made. The industry is carried on in every jail, and Alīgarh, Bareilly, and Agra Districts are especially noted for it. Carpets and rugs.

The principal centre for the manufacture of woollen carpets is Mirzāpur, where a considerable number of factories are at work, including some under European supervision. There is also a large factory at Agra; and while the industry is carried on in many jails, the carpets produced at the Agra Central jail (annual production about 15,000 square yards) have the best reputation. Smaller quantities are made in Morādābād, Cawnpore, Bulandshahr, and Jhānsi Districts. In the case of woollen carpets the warp of cotton yarn is arranged vertically, and the

carpet is made by placing ties of woollen yarn round every pair of threads, instead of weaving. Smaller rugs are also made both of cotton and wool; and felted articles of unspun wool, such as rugs, prayer-mats, horse-cloths, saddles, &c., are produced in many Districts, those made in Bahraich being the best.

Dyeing. The art of dyeing is practised in all parts of the Provinces, and is applied to cotton, wool, silk, and leather. Till within the last twenty years the dyes used were chiefly of vegetable origin; but the use of aniline and alizarine has increased enormously, and is fast driving out the older art. The cost of dyeing has thus been cheapened, and coloured materials are more used, though the dyes are fleeting. There is a considerable industry in cotton-printing. Three classes of cloth are used: English long-cloth for curtains, tablecloths, &c.; coarse country cloth for quilts and rough chintz; and a still stronger cloth for use in place of carpets. The preparation of the cloth by washing and bleaching takes several days, and patterns are then produced by stamping with a wooden die held in the hand. The art is most flourishing in the towns of Farrukhābād, Lucknow, Jahāngīrābād (Bulandshahr), and Jāfarganj (Fatehpur).

Jewellery. Personal ornaments for females are produced in great variety by the ordinary *sonārs* or goldsmiths. They include necklaces, rings for the finger and the nose, bangles, earrings, anklets, tiaras, &c., in gold or silver, sometimes ornamented with precious stones. The poorer classes wear rings, bangles, earrings, and anklets of brass or pewter. At Lucknow ornamental boxes, bowls, flower-vases, &c., are made of silver, adorned with *répoussé* work, but these are chiefly for the European market. Quaint figures of animals are made in Muttra District, of silver cast in a mould. Enamelling on silver and gold, and *bidrī* work, or inlaying silver in an alloy from which *hukka* pots, &c., are made, were formerly practised at Lucknow; but these industries have almost died out. Over 250,000 persons were returned in 1901 as supported by work in connexion with gold, silver, and precious stones, while the Sonār caste numbered 284,000.

Iron. The blacksmith is usually a village servant, who makes and repairs the simple agricultural implements in common use, and is partly paid in kind. Benares, Mirzāpur, Cawnpore, and Farrukhābād are important centres for the manufacture of iron waterpots and iron dishes for domestic use. Rough cutlery is also made at Hāthras and Cawnpore. In 1901,

300,000 persons were returned as supported by the iron industry.

Brass and copper.

Household vessels are almost exclusively of metal. Hindus use brass or some other alloy, while Musalmāns use copper vessels, which are periodically tinned. The chief centres of manufacture are Mirzāpur for ordinary Hindu articles, and Farrukhābād and Lucknow for Muhammadan utensils. More ornamental work is produced in Benares, such as idols, sacrificial implements, shields, bells, embossed panels and trays, besides goods for the European market. There are less important centres for similar work in the Districts of Hamīrpur (idols), Muttra (idols), Jhānsi (toys and brass vessels ornamented with copper), and Etāwah (sacrificial accessories and musical instruments). The ornamentation is partly beaten out with punches and partly engraved. In Morādābād engraved brass-work is ornamented with black, red, or blue lacquer. There is a striking tendency towards the concentration of the manufacture of ordinary articles in the larger centres. The main industries connected with brass and copper supported nearly 60,000 persons in 1901.

Pottery.

The chief class of pottery produced is a rude red ware for domestic purposes. Only the lower castes of Hindus use earthen vessels as cooking-pots, table vessels, or pipe-bowls, but Muhammadans use them freely. Large pots are, however, used by all classes of agriculturists for storing water, grain, and dry goods, for cattle troughs, and for raising water for irrigation. Small articles are made on a heavy wheel revolving horizontally, but the larger vessels are moulded. Ornamental pottery is produced at Chunār in Mirzāpur District, and in Alīgarh, Azamgarh, Lucknow, Bulandshahr, Morādābād, Sītāpur, and Meerut Districts, and in the Rāmpur State. The Bulandshahr, Meerut, and Rāmpur pottery resembles that made at Multān in the Punjab, and is the most artistic. At Lucknow clay models of human beings, fruit, and vegetables are made, which have considerable merit. The potter caste, called Kumhār, numbered more than 700,000 Hindus and 20,000 Musalmāns in 1901, while 370,000 persons were returned as supported by pottery-making. In villages the potter is a servant of the community, who receives regular dues and presents, and supplies certain articles free.

Glass.

Crude native glass is made at many places in the Doāb, the chief centres being in Alīgarh, Mainpurī, and Etāwah Districts. It is manufactured from an efflorescence on the soil of impure carbonate of soda, and the principal articles made

are glass bangles. Country-made glass is blown into small phials and flasks in many places.

Stone-carving.

There is a considerable trade at Agra in articles carved from marble inlaid with other stone, and from soapstone. In Muttra District sandstone is carved; and many private houses and temples exhibit exquisitely carved screens in reticulated tracery, while pillars and beams are also adorned with patterns in relief.

Wood-carving.

Wood-carving was formerly of importance, and carved door-posts, lintels, doors, and balconies still adorn private houses in many Districts. At present the chief work done consists of articles for sale to Europeans, such as overmantels, screens, and photograph frames. Execution is largely sacrificed to speed of production, and the fret-saw and punch are bad substitutes for the highly-trained eye and hand. Sahāranpur is the chief centre of the trade; but excellent ebony-carving is produced at Nagīna in Bijnor District, and at Mainpurī carved wood is inlaid with brass wire.

Ivory.

Ivory-carving is very rare; but the workmen who produce small articles of bone, such as combs, toys, and the like, occasionally work in ivory. Both ivory and bone are used for inlaying in wood.

Sugar.

The manufacture of sugar is of great importance, especially in the Bareilly, Gorakhpur, and Benares Divisions. The cane is pressed in small mills, with two or three rollers, turned by oxen. The juice is then roughly filtered and boiled, and the raw sugar is known as *gur* or *rāb* according as it is solid or liquid. *Rāb* is refined by filtering through grass mats and removing the colour by means of a weed called *siwār* (*Hydrilla verticillata*). Other methods of filtering are through woollen blankets or mats of rice straw. Crystallized and loaf sugar are also made by dissolving *gur* in water.

Mill industries. Cotton.

The most important factory industry is that of spinning and weaving. The first mill was opened by private enterprise at Cawnpore in 1869, and three others are working in the same city. In 1905 there were five other mills, three at Agra and one each at Mirzāpur and Hāthras. The total capital invested is about 111 lakhs, and the out-turn in 1903–4 amounted to 28 million pounds of yarn and 4 million pounds of woven goods. The principal statistics are shown on the following page.

The number of factories for ginning, cleaning, and pressing cotton fluctuates, but has increased considerably from eight in 1881 to sixteen in 1891, sixty-five in 1901, and 101 in 1903,

while the number of persons employed was nearly 5,000 in 1901 and 8,500 in 1903. These presses are mostly situated in the Meerut and Agra Divisions, and are largely owned and managed by natives.

	1880-1.	1890-1.	1900-1.	1903-4.
Number of mills	2	5	6	9
Number of looms	278	2,141	1,645	3,215
Number of spindles . . .	38,328	135,842	247,230	309,620
Average daily number of hands employed	1,194	5,005	7,017	8,940

The single woollen mill at Cawnpore is the largest in India. The out-turn consists of blankets, all kinds of woollen cloths and fabrics, knitting yarn, Berlin wool, &c., valued at over 15¾ lakhs in 1903. The progress made is shown below:— Wool.

	1886.	1891.	1901.	1903.
Number of mills	1	1	1	1
Number of looms	229	271	302	302
Number of spindles . . .	5,160	7,690	13,066	13,066
Average daily number of hands employed	808	1,400	1,500	1,500

Tanneries have long been established in Cawnpore, where there are now four large concerns employing more than 7,000 persons daily. All kinds of leather goods, including boots and shoes, saddlery, military and police accoutrements, are produced and exported to many parts of the world as well as sold in India. Leather.

There are six breweries, five of which are situated in the hills and one at Lucknow, the total out-turn in 1903 being 1·4 million gallons of beer. Breweries.

Other important mill industries are a paper mill at Lucknow, two large sugar-refineries at Shāhjahānpur and Cawnpore, at the former of which rum has long been made, nine iron foundries, and a jute mill. Smaller undertakings are the lac factories in Mirzāpur, forty-five of which employ about 4,700 persons daily, and soap works, ice factories, flour mills, oil presses, printing presses, bone mills, dairies, and brick and tile works. The manufacture of indigo is declining, but in 1903 there were 402 factories with 27,300 persons employed. Other industries.

Unskilled labour is paid at rates which vary according to the demand for other work, especially agricultural. Women are occasionally paid as little as 1½ annas a day, but 2 annas is more usual. Male coolies receive from 2 annas to 4 annas, Wages.

but the rate usually varies between $2\frac{1}{2}$ and 3 annas. Masons and carpenters are paid at rates varying from Rs. 8 to Rs. 15 per month, and blacksmiths from Rs. 12 to Rs. 20. Fitters receive from Rs. 15 to Rs. 25 according to their ability, engine-drivers Rs. 8 to Rs. 15, and spinners in cotton mills Rs. 10 to Rs. 15.

Condition of operatives. Except in Cawnpore, the number of factories or mills in any single place is not sufficient to affect internal migration appreciably, and unskilled workmen can be obtained without difficulty. Skilled labour in such places has often to be imported from Bombay or Karāchi. In Cawnpore, however, labour is often difficult to get, and the number of immigrants is large; but they come chiefly from neighbouring Districts, and very few from a considerable distance. Wages are high, while the cost of living is not appreciably more than elsewhere, so that the operatives are able to support themselves without continuous labour. No recruiting agency has yet been formed; but in 1905 an exhaustive inquiry was made by an official into the causes which affect the supply, and an attempt has been made by a combination among the masters to regulate wages and prevent competition for labour. Since plague spread in Cawnpore the labour difficulties have increased, and two mills have erected model dwellings for their workmen.

Trade and commerce: before annexation. The trade of these Provinces prior to annexation falls into two classes: the trade of the East India Company, and that of the people generally. The former was almost entirely confined to the purchase of cloth at the two centres of Tāndā in Fyzābād and Allahābād, the value in 1786 being less than 3 lakhs, and a little opium. The latter was most important in the eastern half of the Provinces, for Rohilkhand produced chiefly rice and other grain which was exported to Delhi and the neighbouring Districts, while the upper portion of the Doāb had suffered so much during the decay of the Mughal empire that it had no manufactures and agriculture was languishing, the only exception being a small out-turn of indigo near Etāwah. Mirzāpur was the great centre of trade, owing to its position on the Ganges. Here came merchants from the Deccan and Bundelkhand, with raw cotton and indigo, shawl merchants from the west and traders from Nepāl, taking away piece-goods, raw silk, and spices from Bengal, and tin and copper imported from overseas. The through trade in 1786 was estimated at about 50 lakhs. Cotton goods from the eastern half of the Provinces were the chief export of local production. Before the collapse of the Mughal power, the finer products of the looms were sent

to Delhi, but trade with Europe sprang up after the battle of Buxar in 1764.

General character of existing trade.

The chief exports now are wheat, oilseeds, raw cotton, sugar, molasses, opium, hides, and *ghī*; the chief imports are English and Indian cotton goods, metals, kerosene oil, manufactured wares, salt, spices, and for some years past foreign refined sugar. Agricultural produce amounts to about 60 per cent. of the exports and 12 per cent. of the imports in normal years, but bad seasons completely alter the balance of trade. In the Meerut Division alone, where there is a magnificent system of irrigation, the exports are fairly steady. The bulk of trade is carried by rail, and for this accurate figures exist. The total value of imports by rail rose from 11·9 crores in 1880–1 to 13·3 crores in 1890–1, 19·6 crores in 1900–1, and was 18·3 crores in 1903–4, while the total value of exports was a crore, 15 crores, 28 crores, and 24 crores in the same years. Accurate figures of the river-borne traffic are not available, but its total value is estimated at nearly 4 crores. More than half is carried in about equal proportions by the Gogra and the Ganges. Next in order come the Rāptī river, the Ganges Canal, the Jumna, and the Gumtī. Agricultural produce is by far the most important item of this trade, which also includes large exports of wood and stone. Since 1898 the river-borne traffic between the United Provinces and Bengal, carried along or across the Ganges, the Gogra, and the Gandak, has been systematically registered, and its value in 1903–4 was: imports, 108 lakhs; exports, 122 lakhs. No complete statistics are available for the traffic on roads. From 1897 to 1899 the road traffic with the Punjab was registered at seven posts, and from 1900 to 1902 the traffic with the Rājputāna States was registered at ten posts. The system has since been applied to traffic with the Central India States. It is estimated that the total value of trade by road with other parts of India is: imports, 272 lakhs; exports, 124 lakhs. The foreign trade with Nepāl and Tibet, which will be described below, is registered; in 1903–4 imports were valued at nearly 123 lakhs and exports at 48 lakhs.

Chief centres.

The chief centres of trade are Cawnpore, Allahābād, Mirzāpur, Benares, Lucknow, Meerut, Alīgarh (Koil), Hāthras, Muttra, Agra, Farrukhābād, Morādābād, Chandausī, Bareilly, Sahāranpur, Muzaffarnagar, Ghāziābād, Khurja, Kāsganj, Bijnor, Gorakhpur, Ghāzīpur, Pīlībhīt, and Shāhjahānpur. Of these, Cawnpore, Agra, and Hāthras are the most important; but traffic is registered separately only for the first. The trade of Cawnpore is chiefly in raw cotton, cotton goods, grain, oilseeds,

and hides and skins, and amounts to about one-fourth of the total traffic of the Provinces. Mirzāpur, Benares, Lucknow, and Farrukhābād are great centres of the brass and copper industries; but in the other towns the trade in agricultural produce is the most important.

Chamber of Commerce.

The Upper India Chamber of Commerce was founded in 1889 and now has forty-five members, who include almost every European commercial firm and manufacturing concern of consequence in these Provinces and in the Punjab. Its headquarters are at Cawnpore. Trade carried on by natives of India has no similar organization.

Internal trade.

The mechanism of internal trade is simple. Except in the large towns there is no banking system, and rupees are more popular for actual payments than currency notes. In small towns away from the railway, remittances by notes sometimes raise the price of these above their face value. The greater part of the Provincial trade is rural, and is carried on by methods of long standing. In the rural tracts markets are held at convenient local centres, a few miles apart, once or twice or even three times a week. The surplus produce is disposed of in one of three ways. It is handed over to the village grain-dealer, or sold to itinerant buyers, or disposed of in markets. The grain-dealers and buyers may either be agents for larger firms or sellers to them, and thus numerous small lots of produce are brought together within reach of the railways, and consigned elsewhere by the exporting firms, who are either local traders or agents of firms at the seaports. Similarly imports of goods are brought in by the large houses and distributed by them to the retail shopkeepers who have shops in the towns and attend the country markets, or to itinerant vendors. Trade is thus highly organized, though the methods are not those of European countries. Hardly a singular vernacular paper provides commercial intelligence for its readers. In towns small retail businesses appear to be increasing, and it may be said that retail dealers supply a more diversified class of goods than formerly. The whole tendency is towards the breakdown of the old rule—one article, one dealer. The principal trading castes are the Baniās or Vaisyas, but these now have no monopoly. Certain trades connected with the supply of food, such as confectionery, can be carried on only by castes who are considered pure; but even here there is a tendency to wink at the intrusion of other castes. A hundred years ago Banjārās were the grain-carriers, but they have now settled down to agriculture.

The total value in 1903-4 of the external rail-borne trade with the most important Provinces and States is shown below, in lakhs of rupees :— External trade.

	Port of Calcutta.	Port of Bombay.	Rājputāna and Central India.	Punjab.	Bengal, excluding Calcutta.	Bombay Presidency, excluding port.
Imports .	6,28	2,79	2,16	2,69	3,50	1,15
Exports .	10,66	3,50	2,13	3,41	3,38	49
Total	16,94	6,29	4,29	6,10	6,88	1,64

Twenty years ago the trade with Calcutta was nearly half of the total; but it has now fallen to little more than one-third, owing to the improvement of railway communications with Bombay.

The imports may be divided into raw materials (including machinery and coal) and goods ready for consumption. Of the first class, nearly all the coal comes from Bengal, while railway plant and machinery are chiefly imported from Calcutta, Bombay, the Punjab, and Bengal supplying most of the remainder. The most valuable raw materials imported are metals, which are chiefly obtained from Bombay port, Calcutta, and the Bombay Presidency. Most of the gunny-bags imported, which are used for exporting grain, come from Calcutta and Bengal, and Bengal also supplies lac. Hides and skins are chiefly obtained from Rājputāna and Central India or the Punjab. In the case of articles ready for consumption, piece-goods take the first place, usually amounting to one-quarter of the total imports. These come chiefly from Calcutta, Bombay port, and Bombay Presidency. Salt is imported from Rājputāna, the Bombay Presidency, and the Punjab. A large proportion of the total grain imported is usually rice from Bengal and Calcutta, but in 1903-4 there were considerable imports of gram from the Punjab. A temporary feature of the sugar trade is the extent to which sugar from Mauritius has replaced beet sugar from the continent of Europe since the imposition of countervailing duties. The imports are more than balanced by very large exports of country-made sugar. Imports.

The most valuable of the raw materials exported are oilseeds, which are sent to Calcutta, Bombay, and the Punjab. Raw cotton goes chiefly to Bombay and Calcutta for shipment to foreign countries, and hides and skins are mainly disposed of in the same way. Grain and pulse take the first place in the exports of articles ready for consumption; but the figures Exports.

fluctuate enormously. In the prosperous year 1892, the exports were valued at 955½ lakhs, while in the famine year 1897 they fell to 54¾ lakhs. The value in 1903–4 was 520 lakhs, the most important heads being wheat, gram, and pulse and millets. In prosperous years the wheat is chiefly sent to Calcutta or Bombay for export. Opium also forms a valuable article of export, most of it being sent from Ghāzīpur to Calcutta or to the factory at Patna. Next in importance comes sugar, which is supplied to Rājputāna and Central India, the Punjab, Bombay Presidency, Bengal, and the Central Provinces. The most important item under the head of provisions is *ghī* (clarified butter), which is sent to Calcutta, Bombay Presidency and port, Rājputāna and Central India. The chief manufactured goods exported are cotton and woollen. The largest markets for cotton goods are Bengal, Rājputāna, and the Punjab. Trade in indigo has decreased rapidly since 1898, owing to the competition of the artificial dye. Previous to that year the exports varied from 70 lakhs to over a crore, but they have now sunk to 46 lakhs in 1900–1, 21¼ in 1901–2, and 13 in 1903–4. More than half of the total goes to Calcutta and a considerable portion of the remainder to the Punjab.

Trade outside India.

Foreign trade passes direct from these Provinces only to Tibet and Nepāl. It is conducted on primitive lines. Sheep and goats are the means of transport to Tibet, and ponies or pack-bullocks to Nepāl, while barter is largely the method of exchange. The registration is fairly accurate, as transport is difficult outside the roads on which the posts are placed. The value of the imports from Nepāl has risen from 57 lakhs in 1880–1 to 59 lakhs in 1890–1 and 81 lakhs in 1900–1. The principal items and their value in 1900–1 were: grain 35 lakhs, chiefly rice, *ghī* 11 lakhs, oilseeds 7 lakhs, timber 3 lakhs, gums and resins 1 lakh, and spices 7 lakhs. The exports have risen from 32 lakhs in 1880–1 to 34 lakhs in 1890–1 and 43 lakhs in 1900–1; including cotton goods 27 lakhs, salt 4 lakhs, sugar 3 lakhs, and metals 2 lakhs. In 1903–4 the imports were valued at 115 lakhs, and the exports at 45 lakhs.

Trade with Tibet is on a smaller scale. The total value of the imports in 1900–1 (chiefly borax, salt, and wool) was under 7 lakhs, and of the exports (grain, sugar, cotton goods, and pedlars' wares) 3½ lakhs. In 1903–4 the imports and exports were 7·5 and 3·3 lakhs respectively.

Means of communication. Railways.

The total length of railways in the Provinces increased from 2,571 miles in 1891 to 3,423 in 1901 and 3,636 in 1904. Metre-gauge lines increased from 814 to 1,410 miles, and

broad-gauge lines from 1,757 to 2,226 miles. There is now 1 mile of railway to every 31 square miles of area. A railway runs through some part of every District except Almorā and the Tehrī State. The main features of the system are due to the requirements of trade, but they have been occasionally modified by military considerations and the necessities of famine protection. General system.

It has already been stated that the bulk of the trade of the Provinces is with Bengal and Calcutta, and the most important lines are those which carry this. The two trunk lines passing through the length of the Provinces parallel to the great rivers are the East Indian and the Oudh and Rohilkhand, both state railways on the broad gauge, the former being worked by a company and the latter directly by Government. The East Indian Railway, which was commenced before the Mutiny as a military line and trade route, lies entirely south of the Ganges, crossing the Jumna at Allahābād, where it enters the Doāb. It serves Ghāzīpur, Benares, Mirzāpur, Fatehpur, Cawnpore, Etāwah, Muttra, Agra, Alīgarh, Bulandshahr, and Meerut Districts, and meets the North-Western Railway at Ghāziābād. Three short branches run from Dildārnagar to the bank of the Ganges opposite Ghāzīpur, from Tūndla to Agra, and from Hāthras junction to Hāthras city, while the Jubbulpore branch from Allahābād forms the main route from the south-east of the Provinces to Central India and Bombay. The length has increased from 579 miles in 1891 to 597 miles in 1904, including 58 miles of double track. The Oudh and Rohilkhand Railway starts from Mughal Sarai on the East Indian Railway, and its main line traverses the Districts of Benares, Mirzāpur, Jaunpur, Partābgarh, Rāe Barelī, Lucknow, Hardoī, Shāhjahānpur, Bareilly, Morādābād, Bijnor, Sahāranpur, and the Rāmpur State. A loop-line, formerly the main line from Benares to Lucknow, also serves Jaunpur, Fyzābād, and Bāra Bankī. Important cross connexions from Lucknow to Cawnpore, from Bareilly and Morādābād to Alīgarh, and from Morādābād to Ghāziābād, link it with the East Indian Railway. Its broad-gauge length has risen from 693 miles in 1891 to 1,187 miles in 1904, while 81 miles of narrow gauge have been constructed, forming an important link between the eastern and western systems of India. A third means of communication with Bengal is the Bengal and North-Western Railway, an assisted line of metre gauge. This line was till recently situated entirely north of the Gogra, serving the Districts of Gorakhpur, Bastī, Gondā, and Bahraich, Connexion with Bengal.

while branches ran up to the Nepāl border. Its importance has been immensely increased by the link mentioned above, which connects it through Bāra Bankī and Lucknow with the Rājputāna-Mālwā Railway at Cawnpore, and within the last few years extensions have been made south of the Gogra in Balliā, Ghāzīpur, Azamgarh, and Benares Districts. The length has risen from 301 miles in 1891 to 761 miles in 1904.

Connexion with Bombay.

Besides the Jubbulpore branch of the East Indian Railway there are two lines to Bombay. The Indian Midland section of the Great Indian Peninsula broad-gauge line from Itārsi divides at Jhānsi, one branch passing through the Gwalior State to Agra and Delhi, where it joins the East Indian, while the other traverses Jālaun District, meets the East Indian at Cawnpore, and passes over the Oudh and Rohilkhand line to Lucknow. Including a branch constructed as a famine-relief line from Jhānsi to Mānikpur on the Jubbulpore branch, which crosses Hamīrpur and Bāndā Districts, this railway, which is a state line (incorporated since 1900 with the Great Indian Peninsula), had a length of 328 miles in 1891 and 336 miles in 1904. The other line is the metre-gauge Cawnpore-Achhnerā branch of the Rājputāna-Mālwā Railway, which meets the eastern system at Cawnpore and traverses Farrukhābād, Etah, Alīgarh, Muttra, and Agra Districts. It is a state railway, with a length of 261 miles in 1891 and 282 miles in 1904.

Connexion with the Punjab.

The western frontier of the Provinces is crossed by the East Indian Railway opposite Delhi. The North-Western State Railway meets the Oudh and Rohilkhand at Sahāranpur, and also serves the rich Districts of Muzaffarnagar and Meerut, joining the East Indian line at Ghāziābād. The total length was 107 miles, all on the broad gauge, in both 1891 and 1904.

Other lines.

West of the Gogra, the submontane Districts of Sītāpur, Kherī, and Pīlibhīt are traversed by the Lucknow-Bareilly State Railway on the metre gauge, with a length of 198 miles in 1891 and 231 miles in 1904. The Rohilkhand-Kumaun assisted railway on the same gauge, with 54 miles built before 1891, runs from Bareilly to Kāthgodām at the foot of the hills near Nainī Tāl. A branch of the Oudh and Rohilkhand Railway to Hardwār has been extended to Dehra by a guaranteed line, 32 miles long.

Extensions.

Since 1901 some short extensions have been completed on the Bengal and North-Western Railway, and important broad-gauge lines from Fyzābād and Jaunpur to Allahābād, crossing the Ganges, and from Delhi to Agra through Muttra. Extensions have also been sanctioned of the Oudh and Rohilkhand

in Hardoī, and of the East Indian in Meerut, of the Bengal and North-Western in Oudh, and of the Rohilkhand and Kumaun in Morādābād, Nainī Tāl, Bareilly, and Budaun.

Cost of construction. The cost of construction per mile has been—on metre-gauge lines: Lucknow-Bareilly and Rohilkhand-Kumaun, Rs. 41,503; and Cawnpore-Achhnerā, Rs. 46,940; on broad-gauge lines: Oudh and Rohilkhand, Rs. 79,538; and North-Western, Rs. 1,71,532. Separate details are not available for the other lines, which are partly situated in other Provinces.

Influence of railways. The Provinces are now so well served by railways that there is no difficulty in moving grain to any part in which the harvest may have failed, and the result has been to equalize prices. In particular the line through Southern Bundelkhand has been of value. The chief effect of railways on the social conditions of the people has been to relax the restrictions of caste. Food is purchased at railway stations without too close inquiry into the caste of the vendor, and the convenience of swift locomotion overweighs the prejudices of the higher castes against contact with those whose touch necessitates bathing.

Roads. The use of roads for through communication has declined since the spread of railways. In the middle of the eighteenth century there were two main routes through the Provinces. One led from Delhi through Muttra to Agra, and crossing the Jumna at Etāwah, passed through Korā in Fatehpur to Allahābād. The other ran eastwards through Garhmuktesar to Morādābād, and then by way of Bareilly, Shāhjahānpur, Mallānwān (in Hardoī), Rāe Barelī, Salon, and Benares to Patna. When the Provinces became British territory, *zamīndārs* were responsible for local roads. The first great works undertaken by the British Government were: the grand trunk road, commenced in 1832, the line of which has been generally followed by the East Indian Railway; the road from Mirzāpur to the Deccan, and the road from Agra towards Bombay, the last two being of importance for trade, though their length in these Provinces is short, while the first was the great road to the frontier. By 1856 branches had been completed from Khurja and Delhi to Meerut; from Alīgarh and Bhongaon (Mainpurī) to Agra; from Bewar and Gursahaiganj to Fatehgarh, from Kālpī to Cawnpore, from Allahābād to Jaunpur, and from Mirzāpur to Jaunpur; and from Ghāzīpur to Gorakhpur, with sections to Benares and Azamgarh. It was then found that the absence of roads in the Bareilly Division had enabled the Benares Division to capture the

trade in sugar; and a road was commenced from Pīlībhīt through Bareilly, Budaun, and Etah to the grand trunk road, and other roads from Bijnor through Meerut District to Delhi, and from Bulandshahr and Alīgarh to Anūpshahr. After the Mutiny an important cross-road from Bāndā through Fatehpur and Rāe Barelī to Fyzābād was undertaken. There were no metalled roads in Oudh before annexation, except that from Cawnpore to Lucknow. After the Mutiny a military road was made from Allahābād to Fyzābād, and the road from Lucknow to Fyzābād was improved, and extended to Jaunpur.

The roads described above still form the principal through communications. The length of metalled roads increased from 4,681 miles in 1891 to 5,082 miles in 1901, while the length of unmetalled roads under regular repair rose from 13,603 miles to 14,167 miles. As funds become available roads are metalled, especially where they act as feeders to railways. Including roads maintained in private estates, forests, and the like, and also the unmetalled roads which are not regularly repaired, the total length of roads in 1904 was: metalled, 5,789 miles; unmetalled, 24,914 miles. Metalled roads are almost entirely under the Public Works department, and unmetalled roads under the District boards.

Conveyances. The body of the ordinary country cart consists of a framework of bamboos and wood, but contains no boards. Sacking or mats are used to prevent grain or similar substances from falling out. The wheels are frequently solid, though made of several pieces of wood fitted together, and are rarely tired. Country carts vary in size according to the breed of cattle available and the state of the roads. The commonest means of conveyance of passengers is the one-horse *ekka*, a light two-wheeled cart, which merely consists of a box-shaped body with a lid about 4 feet square on which the driver and two or three passengers squat. In the towns improved *ekkas* with springs are becoming common.

Light railways. A light railway runs from Shāhjahānpur to the Lucknow-Sītāpur-Bareilly Railway at Mailānī in Kherī District. It was originally owned by a company, but is now worked by the Bengal and North-Western Railway. An agreement has recently been made with a private firm for the construction of another light railway from the East Indian line at Shāhdara in Meerut District to Sahāranpur, which will serve a rich tract of country.

Canals. No canals have been made exclusively for navigation. When Lord Ellenborough postponed the construction of the

Ganges Canal he declared that its chief purpose should be for navigation, but this view was successfully opposed. On the Ganges Upper and Lower Irrigation Canals, which are considered together for this purpose, the length of channel open to navigation is 412 miles. Special works have been undertaken to facilitate traffic. The Ganges main canal has several falls, and supplementary channels, each about 1½ miles long and provided with a lock, were made to avoid the interruption of navigation throughout the course from Hardwār to Cawnpore. The Cawnpore branch was an integral part of the Ganges main canal; but since the opening of the Lower Ganges Canal the portion of the Cawnpore branch between Nānū where the Ganges Canal bifurcates and Gopālpur where the Lower Ganges Canal crosses the Cawnpore branch has been used only for navigation. The total capital expenditure on navigation works to the end of 1900–1 on the Ganges and Lower Ganges Canals was 9 lakhs. The gross income during the five years ending 1900–1 averaged Rs. 6,000, and the working expenses Rs. 10,000. If interest on the capital outlay be added, the annual loss has been Rs. 22,000. On the Agra Canal, with a capital expenditure of 9 lakhs, receipts averaged Rs. 4,000 and expenditure Rs. 7,000, while interest charges amounted to Rs. 35,457. The Agra Canal was closed to navigation in June, 1904.

The only steamers plying along the rivers of these Provinces are those of the India General Navigation and Railway Company, Limited, which provide a feeder service on the Gogra. Starting from Dīgha Ghāt in Bengal the steamers call daily at Barhaj in Gorakhpur District, and every fourth day at Ajodhyā in Fyzābād, which is the farthest port reached, a distance of 293 miles from Dīgha. The passenger and goods traffic are of equal importance, and the latter includes general merchandise, jute, food-grains, wine, beer, manufactured iron, acids, and salt. The steamers can carry from 300 to 600 passengers and from 25 to 75 tons of cargo. Another line till recently called at Ghāzīpur on the Ganges. Steamers.

The spread of railways has greatly interfered with the carriage of goods by water. There is now no expenditure on the improvement of natural waterways, except on the Ganges between Allahābād and Balliā. Here an attempt is made to keep a waterway never less than 4 to 6 feet deep. This depth is sufficient for country boats and for the river steamers formerly plying. Tolls are collected in accordance with rules made under Act I of 1867, and about 1880 brought in River traffic.

about Rs. 15,000 annually. Ten years later the receipts had fallen to about Rs. 10,000, and in 1903-4 they were only a little more than Rs. 7,000. The normal expenditure on the works is estimated at Rs. 8,000 to Rs. 10,000, a contribution from Provincial revenues being given when required. The country boats are clinker-built, with a burthen rarely exceeding 100 tons and usually much smaller. They are propelled by towing, punting, rowing, or sailing, according to the state of the wind, the river, and its banks.

Ferries.

The rivers are crossed in about twenty places by boat-bridges and ferries under the management of the Public Works department. All other public ferries are managed by District boards, except one or two leased to railways. There is a steam ferry at Ghāzīpur on the Ganges, and during the rains steamers are used at Ajodhyā, but country boats are generally used in other places.

Post Office.

The United Provinces and the Native States of Rāmpur and Tehrī form, together with certain States in the Central India Agency and the State of Dholpur in Rājputāna, a postal circle under the Postmaster-General of the United Provinces. The statistics on the following page show the advance in postal business in the United Provinces in the three last decennial years, and also the figures for 1903-4. Unless otherwise expressly stated, the figures do not include those of the Central India States and Dholpur.

The figures given in the table relate to both the Imperial post and the District or local post. This latter system was a substitute for the posts which, under an old law, *zamīndārs* were compelled to maintain for the purposes of official communication, the police, and the magistracy. The personal obligation was replaced in 1863 by a cess, the proceeds of which were utilized to open post offices at places where their existence would not be warranted under the commercial principles of the Post Office. The expenditure on the District post averaged Rs. 1,86,997 per annum during the five years ending with 1903-4. The number of District post offices on March 31, 1903, was 289, and the total length of District-post mail lines 9,249 miles. In 1906 the reservation of part of the local rates, in which the cess above mentioned had become merged, was abolished; and the District post is now administered in the ordinary way.

Famine. Causes.

The cause of scarcity or famine in these Provinces is deficient rainfall in the south-western monsoon, resulting in a failure of the harvest. The tracts most liable to famine are

the dry tracts of Bundelkhand and the Agra Division. The submontane Districts generally get an adequate rainfall; the Meerut Division has a magnificent system of canal irrigation; while the eastern Districts and Southern Oudh are protected by an enormous number of wells. The wells, however, only partially protect the rice crop, which is the important crop in the east.

	1880-1.	1890-1.	1900-1.	1903-4.
Number of post offices	*1,062	*1,551	1,713	1,858
Number of letter-boxes	*434	*1,754	3,641	4,545
Number of miles of postal communication	*11,966	*13,665	15,143	15,875
Total number of postal articles delivered:—				
Letters	*18,980,338	25,461,242	32,384,462	35,312,628
Postcards	*2,738,334	14,485,822	26,727,167	33,333,144
Packets	*270,074	1,426,162	3,305,937 (including unregistered newspapers).	3,902,470 (including unregistered newspapers).
Newspapers	*1,593,199	3,571,301	3,720,030 (registered as newspapers in the Post Office).	3,809,910 (registered as newspapers in the Post Office).
Parcels	*198,509	247,630	410,613	612,716
	Rs.	Rs.	Rs.	Rs.
Value of stamps sold to the public	*5,84,485	*9,81,844	13,67,983	18,75,749
Value of money orders issued	*60,17,110	*2,05,16,680	3,17,56,518	3,97,94,488
Total amount of savings bank deposits	. .	*70,16,955	1,09,85,530	81,01,354

* These figures include statistics for Dholpur State, for which separate figures are not on record.

From the point of view of famine the autumn is the more important harvest, as it provides the food-supply for the masses of the people, millets and rice. The spring harvest is generally the more valuable (except in the rice tracts); but it is the revenue harvest, not the food harvest. Complete failure of any harvest is no longer possible; whether partial failure will cause scarcity or famine depends on the degree of failure and its effect on the labour market, the character of preceding harvests, and the general condition of the people. The most important crops from the point of view of famine are rice in the eastern and submontane Districts, and elsewhere millets. Harvests.

When the rains fail, the Government looks out for the regular warnings of distress. Prices rise, private charity begins Warnings.

to dry up, and the beggars flock to the towns. There is great activity in the grain-trade and an increase of petty crime. The people become nervous and apprehensive. They may even take to plundering grain-dealers' shops. Cries against speculation and corners in food-grains are raised. These symptoms recur in every famine.

History. Early famines. Famines are known to have been frequent under native rule, but beyond a few horrors that have been preserved in contemporary accounts their history has been lost. Between A.D. 1291 and 1786 thirteen famines are recorded from the neighbourhood of Delhi alone. At the close of the thirteenth century we read that the people from the Siwāliks came crowding into Delhi and in the extremity of hunger drowned themselves in the Jumna, while prices rose to four times the ordinary rates. In the second quarter of the fourteenth century the excessive taxation of Muhammad bin Tughlak aggravated the results of drought and thousands of people died. Ibn Batūta says that he saw people eating hides; Barnī relates that man ate man; the distress lasted for years. At the end of the fourteenth century, after the ravages of Tīmūr, the Upper Doāb again suffered from famine; and in 1424 famine in Hindustān prevented the march of the royal army to Kanauj. In 1471 the Lower Doāb and Bundelkhand suffered during the wars between the Lodīs of Delhi and the Jaunpur kings. Two hundred years later, famine due to drought ravaged the Upper Doāb in 1661. Even of famines so late as 1770 little is known that is worthy of record. In 1783–4 occurred the great famine still known as the *chālisa* or '40 (1783–4 = 1840 *samvat*), in which instructions were issued to 'Chiefs and Collectors' to regulate the price, distribution, and sale of grain, and to establish storehouses. Ten years later severe famine visited the Provinces in consequence of a failure in the monsoon of 1803, following a period of political disturbance. Relief was given by remitting over 30 lakhs of revenue, by advancing 10 lakhs to the landowners, and by offering a bounty on all grain imported into Benares, Allahābād, Cawnpore, and Fatehgarh. This was followed in 1812 by a famine in the trans-Jumna Districts, regarding which little is known.

1837–8. In 1837–8 occurred perhaps the worst famine of the nineteenth century. From Allahābād to Delhi the famine was intense, especially between Cawnpore and Agra. The rains of 1836 had failed almost completely and previous harvests had been poor. Prices rose to about 10 seers per rupee. There

were violent outbreaks of crime and the troops had to be called out. The mortality was very great, and the country did not recover for many years. The principles of modern relief policy date from the arrangements made in this famine. Remissions of revenue were granted to the amount of 95 lakhs; 20 lakhs was spent on relief works and 3½ lakhs on gratuitous relief.

This famine was followed by a cycle of good years. Then came the disturbances of the Mutiny and two years of irregular rainfall. In 1860 the monsoon failed, and famine was general in the western Districts of Bundelkhand and very severe between Agra and Delhi. More than 9 lakhs was spent on relief works and 5½ lakhs on gratuitous relief. Advances were given to the extent of 3 lakhs and 2½ lakhs of revenue was remitted. This famine is celebrated for the invention of poor-houses by Mr. (afterwards Sir) John Strachey, and for the gift of relief to *parda-nashīn* ladies in their homes; it was also the occasion of the first famine inquiry, in the course of which Colonel Baird-Smith drew prominent attention to the increase in staying power shown by the people. This he attributed to stability of tenure and canal irrigation. 1860–1.

The Rājputāna famine of 1868 affected the whole of the west of the Provinces and Bundelkhand, and was very severe in the trans-Jumna Districts. Sir William Muir, the Lieutenant-Governor, issued the famous order insisting on the personal responsibility of officers to save every life that could be saved. The relief system, however, broke down under the pressure of immigration from Native States. About 25 lakhs was spent on relief works and 4½ lakhs on gratuitous relief. About 10 lakhs was advanced to cultivators, but remissions of revenue were small. 1868.

The Bihār famine of 1873–4 was accompanied by scarcity in the adjacent Districts on the east of these Provinces, and also in Bundelkhand. It was found, however, that little relief was required. 1873–4.

The failure of the monsoon in 1877 was the worst on record, and the autumn crop on unirrigated lands was lost; but good rains in October and December secured the spring harvest. Relief works were opened in September, but people did not come in any numbers until early in 1878. They left the works for the spring harvest, but returned when that had been gathered, and stayed until the rains fell in August, 1878. Only 16 lakhs was spent on relief works, and about 4 lakhs on gratuitous relief. 1877–8.

1890–2. In 1890 both crops failed in Kumaun, which hardly produces sufficient grain to support its inhabitants even in good seasons. The people had money, but there was no grain to buy. Accordingly Government imported 45,000 maunds of grain. This met the situation, and no further relief was required. Similar conditions in 1892 led to similar measures. Again about 45,000 maunds of grain were imported by Government agency. This proved to be sufficient in Garhwāl, but relief works were opened elsewhere. These failed to draw any considerable numbers, and an early monsoon in 1892 put an end to the scarcity, which in neither year had been acute. On both occasions the expenditure was small, most of the money spent having been recovered.

1896–7. The monsoon of 1895 failed in Bundelkhand, and by the end of the year it was necessary to start relief. The rains of the year following failed more or less generally and famine became general over the Provinces, excluding the Meerut Division. A very elaborate organization of relief was undertaken. Altogether 282 million 'units'[1] were relieved. The direct expenditure on relief, excluding establishment and incidental charges, was 167 lakhs. Loans and advances amounted to 40 lakhs, revenue was suspended to the extent of nearly 145 lakhs, and remitted in the case of 65 lakhs more.

Statistics. The effects of the famine of 1868–9 and 1877–8 were still to be traced in the census statistics of 1901, the former in the low proportion of persons at ages between thirty and thirty-five, and the latter in that at twenty to twenty-five. The vital statistics for the years 1894 and 1897 illustrate the difference in the effects of bad fever and famine. Infantile mortality was greater in 1894 than in 1897; but this was probably due to a higher birth-rate in 1893 than in 1896. From the ages five to fifteen famine sweeps off more persons than fever. Between the ages of fifteen and forty fever is more deadly to females than famine, and less fatal to males, the explanation being that this is the child-bearing age for females. From forty to sixty famine claims more victims from both sexes than fever, which again assumes the upper hand in the last stages of life. Both fever and famine reduce the birth-rate, but the recovery after a famine is immediate and more marked than after fever.

Protection. Much has been done to protect the Provinces against the effects of drought. The Doāb is intersected with canals drawn from the Ganges or the Jumna, the greatest being the UPPER GANGES CANAL, capable of irrigating about $1\frac{1}{2}$ million

[1] 'Unit' means one person relieved for one day.

acres. The Lower Ganges Canal has already irrigated more than a million acres, and is designed to irrigate 1¼ million acres. Altogether 1,551 miles of canals and branches are open, with 8,081 miles of distributaries, 3,432 miles of drains, and 331 miles of escapes, navigation channels, mill-runs, &c. In addition there are about half a million masonry wells, of which the greater number are found in the eastern Districts and southern Oudh. The Government offers advances on easy terms for the construction of wells to all who can give any security. As yet but little advantage has been taken of the offer. A programme for extending canals and banking up small streams to form reservoirs is now being carried out in Bundelkhand, where the principal canal is taken from the Betwa.

Great attention has been paid to the improvement of communications. In 1904, 3,636 miles of railway were open to traffic, and some 300 miles in addition were under construction or about to be constructed, while surveys have been sanctioned for 165 miles more. The railways are fed by an elaborate system of roads that are regularly kept up.

Administration. Government.

The first Lieutenant-Governor of the North-Western Provinces was Sir C. T. Metcalfe, who was appointed in 1836. Excluding temporary incumbents, his successors, with the dates of their appointment, were: Mr. T. C. Robertson (1840); Mr. J. Thomason (1843); Mr. J. R. Colvin (1853); Sir G. F. Edmonstone (1859); Hon. E. Drummond (1863); Sir W. Muir (1868); Sir J. Strachey (1874); and Sir G. Couper (1876). The Governor-General-in-Council three times administered the Provinces in person: namely, from 1838 to 1840 (Lord Auckland), from 1842 to 1843 (Lord Ellenborough), and from 1858 to 1859 (Lord Canning). The North-Western Provinces and Oudh were united in 1877 under Sir G. Couper as Lieutenant-Governor and Chief Commissioner, a post which has been since held by Sir A. C. Lyall (1882), Sir A. Colvin (1887), Sir C. H. T. Crosthwaite (1892), Sir A. P. MacDonnell (1895), Sir James Digges La Touche (1901), and Sir J. P. Hewett (1906). The title of Chief Commissioner was dropped in 1902, when the new name of United Provinces was introduced. The Secretariat staff consists of five secretaries and five under-secretaries. Three of the secretaries belong to the Indian Civil Service; the chief secretary is in charge of the Revenue, Appointment, General Administration, Political, and Forest departments; another secretary of the Medical, Judicial, Police, Educational, and Sanitation departments;

and the third of the Local Self-Government, Financial, Municipal, Miscellaneous, and Separate Revenue departments. The other two secretaries belong to the Public Works department, and are also Chief Engineers. One of these deals with the Irrigation branch, and the other with Roads and Buildings. The Board of Revenue is the highest court of appeal in revenue and rent cases, and has also important executive duties. It is the chief revenue authority in the Provinces, controlling the assessment and collection of land revenue, income tax, stamps, and excise, and is also the Court of Wards. There are two permanent members, and a third member was temporarily sanctioned for four years from 1902, on account of the pressure of work due to settlement and the operations of the Bundelkhand Encumbered Estates Act. The Board has a secretary and joint-secretary who belong to the Indian Civil Service, and a junior secretary who belongs to the Provincial Service. The heads of Provincial departments are the Inspector-General of Police, Director of Public Instruction, Inspector-General of Jails, Inspector-General of Civil Hospitals, Sanitary Commissioner, Director of Land Records and Agriculture, and Commissioner of Excise and Stamps, who is also Inspector-General of Registration. The Accountant-General and Postmaster-General represent Imperial departments under the Government of India.

Districts and Divisions.

There are forty-eight British Districts, thirty-six being in the Province of Agra and twelve in Oudh. The average area is about 2,200 square miles, and the average population a million. Districts vary in size from 977 square miles (Lucknow) to 5,223 square miles (Mirzāpur) in the plains, while the hill Districts of Almorā and Garhwāl have an area of 5,416 and 5,629 square miles respectively. Each District is in charge of a District officer, who is called Collector and Magistrate in the Province of Agra, excluding the Kumaun Division, and Deputy-Commissioner and Magistrate in the Kumaun Division and in Oudh. The Districts are grouped together in Divisions, each under a Commissioner, to whom the District officers are subordinate. There are nine Divisions, having an average area of nearly 12,000 square miles, and a population of 5 to 6 millions. The number of Districts in a Division varies from three (Kumaun and Gorakhpur) to five (Benares), six (Meerut, Agra, Bareilly, Lucknow, and Fyzābād), or seven (Allahābād). The most important subdivision of a District is the *tahsīl*, of which there are 217, with an average area of 500 square miles and a population of 220,000. For judicial purposes (both criminal

and revenue) the District officer assigns a subdivision, which consists of one or more *tahsīls*, according to the number of officers available, to each of his subordinates, who may be Covenanted Civilians (Joint and Assistant Magistrates and Assistant Collectors), or members of the Provincial Service (Deputy-Collectors and Magistrates). In a few large Districts (e. g. Sahāranpur, Bāndā, Hamīrpur, Jhānsi, Gorakhpur, Nainī Tāl, Almorā, and Garhwāl) one or more of the subdivisional officers reside in their subdivisions, but as a rule they are stationed at head-quarters. In the revenue system of the Mughals the *Sarkār* roughly corresponded in area to the Division, and the *Dastūr* to the District, though the limits of particular units have largely altered.

Sub-ordinate officers. Each *tahsīl* is in charge of a *tahsīldār*, who is primarily responsible for the collection of revenue, and also exercises judicial powers (criminal and revenue). *Tahsīls* are divided into *parganas* (which are chiefly of importance in the periodical settlement of land revenue, when they are taken as convenient units). The *parganas* correspond very closely both in name and area with the *mahāls* recorded in the *Ain-i-Akbarī*. Subordinate to the *tahsīldārs* are the supervisor *kānungos*, of whom there are, on an average, about three to each *tahsīl*, or 731 in all. These officials supervise the work of the *patwāris* or village accountants, and check their papers, besides performing miscellaneous functions.

Village system. The village autonomy is chiefly confined to the internal relations of the villagers. As in most parts of India, menials (such as the messenger, watchman, barber, and sweeper) and artisans (blacksmith, carpenter, and potter) are village servants and receive a share in the crops for ordinary services. Previous to British rule the village system in Northern India was local government by an aristocracy. The lower castes managed their own social affairs by a *panchāyat* or council in each caste, but had no voice beyond this, and were largely in the position of serfs. The higher castes had no *panchāyats*, but the chief tenants or *zamīndārs* managed the affairs of the village. Land revenue and canal rates are generally collected (except in the eastern Districts) by the *lambardār*, who is selected by the subdivisional officer after nomination by the whole body of co-sharers. Apart from this, no regular link existed between the people at large and the officials of government, till, in 1894, headmen, generally selected from the *lambardārs*, were appointed in every village and large hamlet. The headman (*mukhia*) has no powers of any kind, but in consideration of

his duties of reporting crime under the Criminal Procedure Code he is allowed to possess a sword without a licence. An attempt recently made to associate the headman with the police in criminal investigations has been abandoned.

Native States.

The Commissioners of the Bareilly and Kumaun Divisions are Political Agents for the Native States of Rāmpur and Tehrī respectively. Each of these States is administered by the chief with the help of a Council or Darbār. In Rāmpur the Minister is at present (1906) an official lent by the British Government. Both chiefs now exercise full powers of civil, criminal, and revenue administration; but the Rājā of Tehrī submits the records of cases in which he has ordered capital punishment for the approval of the Commissioner of Kumaun. The Commissioner of Benares is a Political Agent for the purpose of paying certain political pensions.

Legislation and justice. Legislative Council.

A Council for legislative purposes only was first constituted in 1886. It consisted of nine members, of whom not fewer than three were non-officials, the Lieutenant-Governor presiding. The Indian Councils Act of 1892 provided for an enlargement of both the functions and the numbers of the members. The Council now consists of a maximum number of fifteen members, of whom not more than seven may be officials. Of the eight non-official members, six are appointed by the Lieutenant-Governor on the recommendation of the representatives of two groups of selected municipal boards, two groups of District boards, the Upper India Chamber of Commerce, and the Senate of the Allahābād University. The annual financial statement is explained by the Financial Secretary to Government and discussed by the members, who are not, however, permitted to refer to Imperial finance. Questions may be asked at any meeting on any subject, but are limited to matters of fact in the case of subjects which are, or have been, the subject of controversy between the Government of India or the Secretary of State and the Local Government.

The following are the chief legislative measures specially affecting the Provinces which have been passed since 1880, excluding Acts subsequently repealed:—

A. IN THE GOVERNOR-GENERAL'S COUNCIL.

Vaccination	(XIII of 1880).
Benares Family Domains	(XIV of 1881).
Indian Easements	(V of 1882, extended by VIII of 1891).
Northern India Ferries	(III of 1886).
Lieutenant-Governor's Functions, Agra .	(XIX of 1886).

Oudh *Wasīkas*	(XXI of 1886).
Oudh Rent	(XXII of 1886).
Civil Courts, Agra	(XII of 1887).
Allahābād University	(XVIII of 1887).
North-Western Provinces and Oudh (Administration)	(XX of 1890).
Courts, Oudh	(XIV of 1891).
Excise	(XII of 1896).
Assam Labour and Emigration	(VI of 1901).
United Provinces (Designation)	(VI of 1902).

B. ACTS OF THE LIEUTENANT-GOVERNOR.

Water-works	(I of 1891).
Lodging-houses	(I of 1892).
Village Sanitation	(II of 1892).
Village Courts	(III of 1892).
Sewerage and Drainage	(III of 1894).
Honorary Munsifs	(II of 1896).
Steam Boilers and Prime Movers	(I of 1899).
Court of Wards	(III of 1899).
Municipalities	(I of 1900).
Oudh Settled Estates	(II of 1900).
Agra Tenancy	(II of 1901).
Land Revenue	(III of 1901).
Bundelkhand Encumbered Estates	(I of 1903).
,, Alienation of Land	(II of 1903).
General Clauses	(I of 1904).
Local and Rural Police Rates	(II of 1906).
United Provinces District Boards	(III of 1906).

Administration of justice.

Except in the Kumaun Division, which will be referred to later, the subordinate civil courts are distinct from the courts dealing with criminal and rent and revenue cases. The High Court in the Province of Agra, and the Court of the Judicial Commissioner in Oudh, are the final appellate authorities in both criminal and civil cases. The former consists of a Chief Justice and five puisne Judges, and the latter of a Judicial Commissioner and two Additional Commissioners. District and Additional District Judges, of whom there are twenty-one in the Province of Agra and six in Oudh, have both original and appellate jurisdiction in civil and criminal cases, and occasional appellate jurisdiction in rent cases. District officers and their assistants, including *tahsīldārs*, preside in both criminal and rent and revenue courts. In Kumaun the Commissioner is a High Court in civil cases and a District Judge in criminal cases, while the District officers and their assistants exercise civil, criminal, and rent and revenue powers. In the larger cantonments the Cantonment Magistrates have limited powers as Judges of a Small Cause Court.

Civil justice.

The ordinary civil courts of original jurisdiction are those of the Munsif, Subordinate Judge, Judge of Small Cause Courts, and District Judge. There are sixty-eight Munsifs in the Province of Agra and twenty-five in Oudh, whose jurisdiction extends to all suits the value of which does not exceed Rs. 1,000. In Oudh a few Munsifs have been specially empowered to decide suits of a value up to Rs. 2,000. Subordinate Judges, of whom there are nineteen in Agra and twelve in Oudh, may try suits of any value in Agra, and suits the value of which does not exceed Rs. 5,000 in Oudh, unless they are specially authorized to try suits without limit. Appeals from the decrees of Munsifs and Subordinate Judges, where the value of the suit does not exceed Rs. 5,000, lie to the District Judge, who may, and generally does, transfer appeals from the decrees of Munsifs to be heard by Subordinate Judges. Appeals from the decrees of District Judges, and from the decrees of Subordinate Judges in cases exceeding Rs. 5,000 in value, lie to the High Court in the Province of Agra and to the Judicial Commissioner's Court in Oudh. There are five Judges of Small Cause Courts, whose jurisdiction extends to suits valued at Rs. 500, in the Districts of Allahābād, Cawnpore, Benares, Agra, and Lucknow; but all Subordinate Judges and many selected Munsifs have limited jurisdiction as Judges of Small Cause Courts.

The principal statistics of civil suits are shown in the table on page 151. There has been a striking increase in the number of cases disposed of by Small Cause Courts, which averaged 32,479 from 1881 to 1890 and 59,458 from 1891 to 1900. This is more than counterbalanced by the decrease in cases tried by Subordinate and District Civil Courts. The increase in rent litigation is due to a change in the law in the Province of Agra made so recently that its permanent effect cannot be gauged. The figures for civil suits proper do not include those for Kumaun, where the number of suits decided averaged 5,320 from 1881 to 1890, 5,092 from 1891 to 1900, and was 4,228 in 1901, and 4,187 in 1903.

In Oudh there are a few Honorary Munsifs, and the system is now being extended to the Province of Agra. Their jurisdiction is similar to that of Judges of Small Cause Courts, but is limited to suits not exceeding Rs. 200 in value, and they follow the procedure of ordinary Munsifs. Provision has been made for the establishment of village courts by (United Provinces) Act III of 1892, and Village Munsifs are being appointed. Only simple cases are cognizable by these courts, and jurisdic-

tion is fixed at a maximum of Rs. 20. In 1903 the seventeen Honorary Munsifs in Oudh decided 1,750 cases; and 435 Village Munsifs, of whom 178 were in the Province of Agra and 257 in Oudh, decided 7,221 cases.

Criminal courts.

The stipendiary Magistrates include *tahsīldārs*, Deputy-Magistrates, Assistant and Joint-Magistrates, and District Magistrates. The first-named usually have second or third class powers, while Deputy-Magistrates and Covenanted Civilians are invested with full powers after completely passing their examinations. There are also eleven regular Cantonment Magistrates, and a few Special Magistrates in the Forest and Canal departments. In the larger towns and in a few rural areas there are benches of Honorary Magistrates with 278 members; seventy-six other Honorary Magistrates are empowered to try criminal cases, chiefly in their own estates.

The chief statistics of criminal justice are given in the table on page 151. There has recently been a steady though small reduction in the total number of persons convicted, which fell from an average of 236,765 in the decade 1881–90 to 228,881 in the following decade. The decrease is chiefly noticeable in the convictions for offences against person and property, which fell by more than 6 per cent., and indicates a distinct improvement in public safety.

Registration.

All District Judges are Registrars under the Registration Act, 1877. In Dehra Dūn the Subordinate Judge, and in the Kumaun Division Deputy-Commissioners, hold the same office. The Provinces are divided for registration purposes into sub-districts, which usually correspond with *tahsīls*; and a sub-registrar is appointed for each sub-district, the work of these officials being supervised by two inspectors. The number of offices was 362 in 1881, 347 in 1891, 271 in 1901, and 264 in 1904. The reduction is chiefly due to reorganizations in Oudh, where the number was formerly excessive. The number of documents registered has increased from an average of 187,530 in 1881–90 to 216,867 in 1891–1900. In 1904 it was 207,556.

Finance: native rule.

The main source of public income under native rule was derived from an assessment on land. In addition to this many cesses or taxes were levied, some being items of imperial receipt, while others were merely the irregular extortions which formed part of the remuneration of the officials, or the income of the *zamīndārs*. Chief among the imperial taxes were excise, customs, taxes on manufactures (especially weaving) and houses, and town duties on sales or octroi. The officials and the land-

holders levied transit dues on goods, and presents on different occasions, such as festivals. In Oudh, at the time of annexation, the nominal demand for land revenue was about 130 lakhs, which was increased by fees and cesses to nearly 170 lakhs. The summary settlement of the land revenue after the Mutiny amounted to less than 106 lakhs.

British rule. The striking feature of the first seventy years of the nineteenth century is the strict control over expenditure exercised by the Supreme Government. The proceeds of a few cesses and minor sources of income could alone be spent by the Provincial Government without sanction.

Decentralization, 1871–7. The first scheme of decentralization took effect from 1871–2, when the administration of certain departments (jails, registration, police, education, medical services, excluding the salaries of superior officers, printing, roads, buildings, and miscellaneous public works) was made over to the Provincial Government. The receipts, from those which were productive, were estimated at 13½ lakhs and the charges at 98 lakhs, and a fixed annual allotment of 84½ lakhs was made to cover the difference. These arrangements lasted for six years with a few small alterations.

1877–82. In 1877–8 a further step was taken, and items which supplied revenue more capable of development were transferred to the control of the Provincial Government. These included excise, stamps, law and justice, collections from Government estates in the Tarai, Bhābar, and Southern Mirzāpur, and a few miscellaneous items, while the Provincial Government was made responsible for expenditure on the services connected with land revenue, excise, stamps, administration, stationery, law and justice, and a few other items. The total Provincial expenditure was thus raised to 274 lakhs, which was to be met by estimated receipts of 142 lakhs and an allotment of 84 lakhs, the balance being a charge on Local funds which were not yet separated from Provincial accounts. Variations from the estimated receipts were to be shared equally between the Provincial and Imperial Governments. These figures also cover the separate arrangements under which productive canals and railways of purely local importance were entrusted to the Provincial Government, which was further made responsible for a part of the expenditure on famine relief. By the former arrangement expenditure amounting to 41 lakhs was transferred with an income of 31 lakhs, while, to meet the deficiency, a licence tax yielding 8½ lakhs was imposed in the Province of Agra under Act VIII of 1877, which was afterwards revised

and extended to Oudh by Act II of 1878. To meet the expenditure on famine relief, special rates were authorized by Acts III and IV of 1878, which also gave power to reserve portions of the local rates for Provincial canals and railways. The new arrangements worked satisfactorily, and the Provincial and Local balances, which were still practically identical, increased to 135½ lakhs.

The next change made was to substitute a fixed proportion of certain revenues for a lump assignment. Thus the revenue from, and expenditure on account of, forests (which had previously been Imperial), excise, assessed taxes, stamps, and registration were divided equally between the Imperial and Provincial accounts. Charges on account of pensions were made entirely Provincial, and the arrangements made for canals and railways were continued. The expenditure thus assigned exceeded the income, but a further addition was made of 25·45 per cent. of the land revenue, by which it was calculated that a surplus of about 5 lakhs would be available. The total annual income was estimated at 309½ lakhs, and the expenditure at 304⅓ lakhs. At the same time taxation was reduced by the abolition of the cesses from which *patwāris* (village accountants) and *kānungos* (inspectors of *patwāris*) were paid in the Province of Agra, and by the transfer of the liability for the pay of the same officials from the *zamīndārs* to Government in Oudh. In the last year of the contract the old licence tax was replaced by the Imperial income tax (Act II of 1886). 1882-7.

In the next quinquennial period the Provincial share of land revenue and excise was reduced to one-quarter, while the share in stamps was raised to three-quarters, and the cost of survey and settlement, of which three-quarters had previously been met from Imperial revenues, was made entirely Provincial. The railways which had been built from Provincial savings now became Imperial, with one exception. It was estimated that the income, after a lump deduction of 4½ lakhs in favour of Imperial revenue, would be 324 lakhs and the expenditure 321 lakhs. New taxation was imposed in 1889 in the shape of a *patwāri* rate[1]; but the proceeds (which were credited to a new fund) were really a subvention to Imperial revenues, as the lump deduction was increased by 20 lakhs, the estimated yield of the tax. Savings amounting to 22 lakhs in settlement expenditure were resumed by the Supreme Government. 1887-92.

[1] This rate was finally abolished in 1906.

1892–7. Railways were entirely removed from the Provincial account in 1892. The new settlement was made with no other change in the method of sharing, but the annual lump deduction from Provincial receipts was fixed at 25 lakhs, the estimated income and expenditure being taken as $315\frac{1}{4}$ lakhs. A sum of 5 lakhs annually was also given for reforms in the police. This settlement was soon found to be inadequate, and in 1894 necessary reforms in District establishment and in the survey system could be carried out only by charging their cost to the *patwāri* fund. By 1896 the Provincial balance had fallen to 17 lakhs, and in the last year of the settlement famine caused Provincial bankruptcy.

1897–1904. Pending the restoration of normal conditions, a temporary arrangement was made for one year, the Provincial share of the heads of revenue most affected (land revenue, excise, rates, and irrigation) being taken at fixed sums. Another provisional settlement followed on the same lines as those for 1887 and 1892, with the exception that the net revenue from irrigation ('major' works), which had fluctuated considerably, was now equally divided and compensation was given in the lump adjusting figure. This settlement was originally made for two years, but it was continued by short extensions up to 1904.

General results. The expenditure of the Provincial Government during the early settlements was designedly economical, in order to accumulate reserves which could be spent on productive works. Imperial considerations, however, led to the removal from the account of the Provincial railways, on which 120 lakhs had been expended. The method of adjusting the terms of settlement on the basis of previous expenditure had tended to stereotype a low scale. Excluding the capital cost of railways and canals, the actual Provincial expenditure was $322\frac{1}{2}$ lakhs a year from 1882 to 1887, and 320 lakhs a year from 1887 to 1892. A more liberal allowance was made in the temporary settlements from 1897 to 1904, and the average expenditure from 1897 to 1902 was 363 lakhs. This included extra grants of 10 lakhs in 1898–9, 13 lakhs in 1902–3, and $12\frac{1}{4}$ lakhs in 1903–4, of which specified amounts were allotted for expenditure on education, public works, and the pay of establishments in District offices and courts.

The variations in the receipts and expenditure under different heads are shown in the tables on pages 152 and 153, and the most important are referred to in describing the various branches of administration concerned.

Present From 1904 a new settlement has been made, which will

ordinarily not be altered until the variations over a term of years from the standard now taken have become considerable. The Provincial share of receipts and expenditure is fixed at a quarter in the case of excise, assessed taxes, forests, and registration, and at one-half in the case of stamps; while in the case of land revenue the Provincial Government obtains one-quarter of the receipts, excluding those from Government estates which are entirely Provincial, and bears half the charges. 'Major' irrigation works have been made entirely Provincial, but a net revenue from them of at least 40 lakhs is guaranteed. The estimated revenue for 1904–5 was 372½ lakhs. A lump sum of 30 lakhs has been given to start the new settlement, besides some smaller amounts for special purposes. arrangements.

Land revenue Tenures. Proprietary.

Proprietary rights in land existed in most parts of the Provinces before the advent of British rule, but were not strictly defined, and the sale of such rights was almost unknown. In Bundelkhand and in Kumaun the system was *ryotwāri*, while elsewhere it was generally *zamīndāri*, though in the eastern Districts it so far resembled *ryotwāri* that the principle of the joint responsibility of all the co-sharers for payment of the land revenue due from the village was not recognized, each co-sharer being responsible for his own quota only. No distinction was made between these two classes in the revenue system introduced by the British, but the effects of the difference in constitution are still noticeable, and joint responsibility is enforced with difficulty in some parts of the Provinces.

Talukdārs.

Double proprietary rights were found to exist in some Districts, mostly in estates which were known as *talukdāri*, where the inferior proprietors were called *zamīndārs*, *biswadārs*, *birtiās*, or *mukaddams*. The *talukdāri* estates had their origin in various ways. Some of the *talukdārs* were representatives of old princely houses who had retained or acquired authority over considerable areas, or were chiefs of territorial clans. Others were officials who had by degrees acquired similar authority which tended to become hereditary. In the disorder prevalent during the eighteenth century *talukas* grew or fell to pieces according to the personal character and power of the *talukdār*. Powerful *talukdārs* absorbed the property of their smaller neighbours, some of whom were forced to accept a subordinate position, while others voluntarily placed their villages under the control of the *talukdār* for the sake of protection. On the other hand, in the old territorial *talukas* it had been the practice of the *talukdārs* to grant subordinate rights in portions of their hereditary domains. Such grants were of various

kinds, and the most common form was that of *birt*, a term meaning 'cession[1].' They were made for a money payment, for services, to the heirs of men who had died in battle (*marwat*), and frequently in the northern Districts for the clearance of jungle, or reclamation of waste. The early experience of the British in Bengal pointed to the advisability of engaging with the actual village proprietors, and not with the *talukdārs*, where these were officials or had but recently acquired their authority; and this policy was adopted in the settlements of Benares and the Ceded and Conquered Provinces. Thus in the Province of Agra the double proprietary form of tenure is now rare, except in a few Districts. In OUDH the system had flourished under the misrule of the first fifty years of the nineteenth century, and *talukdārs* held two-thirds of the villages in the Province. The policy of setting aside the *talukdārs* was applied to Oudh in 1856, when they lost nearly one-half of their *talukas*, but after the Mutiny the status before 1856 was revived. In the Province of Agra the engagement for payment of revenue is usually taken from the subordinate proprietor, who also pays a fixed percentage on the revenue (generally 10 per cent.) into the treasury, which is disbursed by Government to the *talukdār*. In Oudh the settlement is made with the *talukdār*, and the subordinate proprietor is protected by a sub-settlement. The latter manages the estate for which he has a sub-settlement, and pays the revenue demand *plus* a fixed amount to the *talukdār* direct. The area held in *talukdāri* tenure amounts to 55 per cent. of the assessed and 51 per cent. of the total area in Oudh, but only a small portion of this is sub-settled.

Other subordinate rights. Other subordinate rights exist, which extend only to specific plots in a village, and not, as in the case of a sub-settlement, to an entire village or *mahāl*. These rights arose in various ways. Sometimes they are a vestige of a former proprietary right. In other cases their origin was a grant similar in character to those already described, or they were the religious and charitable grants commonly known as *sankalp*. The sum payable to proprietors by under-proprietors, as the holders of these rights are called, is liable to revision at each settlement. In the Benares Division, which is permanently settled, similar rights are held by permanent tenure-holders whose rent is not liable to alteration.

Revenue unit. For revenue purposes the unit is the *mahāl*, which may be defined as the area for which a separate agreement for the

[1] J. Hooper, *Bastī Settlement Report*, p. 34.

payment of land revenue is taken. A *mahāl* may be a single village or part of a village, or may include more than one village. In the eastern Districts complex *mahāls* occur, which often extend to parts of a number of villages.

Zamīndāri. The ordinary landholder is known as *zamīndār*, and *zamīndāri* tenures are divided into four classes: (*a*) *zamīndāri* proper, in which the profits (but not the land) of a whole *mahāl* are divided among the co-sharers, if there are more than one, according to their shares; (*b*) *pattīdāri*, where the whole land (not the profits) of a village is divided between the different co-sharers or groups of co-sharers in definite fractions of the total; (*c*) imperfect *pattīdāri*, where part of the land is undivided as in *zamīndāri*, and part is divided as in *pattīdāri*, the profits of the undivided land being shared in approximately the same proportions as those of the divided land; (*d*) *bhaiyāchārā*, where the land is also divided, but where each share is a definite area or specific plot and is not defined as a fraction of the whole. Revenue is usually paid in each class by a representative of the co-sharers who is called the *lambardār*; one or more *lambardārs* are appointed in each *mahāl*. In *zamīndāri mahāls* owned by several co-sharers, and in *pattīdāri mahāls*, the relations between landlord and tenant are managed by representative co-sharers in consultation with the whole body. In the eastern Districts, as already noted, the *lambardāri* system is not successful, owing to the weakness of joint responsibility, and individual co-sharers frequently manage their own shares and pay their revenue direct.

Tenant rights. In the permanently-settled Districts of the Benares Division a special class of tenants is found who have heritable and transferable rights at a fixed rent, and are liable to eviction only for default in paying rent. Other tenants are divided into two classes according as they have or have not a right of occupancy; but the term 'occupancy tenant' bears a different meaning in each Province, and the non-occupancy tenant in Oudh has certain rights which he does not possess in Agra. In the older Province the occupancy tenant has a heritable, but not a transferable[1], right to hold certain land, and is not liable to eviction except for default in paying rent, while the rent payable cannot be enhanced except by mutual agreement or by order of a revenue court, generally on the ground that it is below the prevailing standard of rent for similar land. Up to the passing of Act X of 1859, it was left to the Settlement officer to record whether any particular tenant had

[1] Subletting is allowed under certain restrictions.

occupancy rights or not according to the custom of the locality. That statute, however, provided that any tenant acquired occupancy rights in land which he had cultivated continuously from year to year, without holding a lease, for at least twelve years, unless the land was the home farm (*sīr*) of a proprietor or was already included in an occupancy holding. The increase of population and growing competition for land led in some parts of the Provinces to a strong desire on the part of the landlords to check the growth of occupancy rights, which was carried into effect by manipulating the village records, by giving short leases, or by changing the holding of a cultivator before the right had accrued. The law was accordingly altered by (United Provinces) Act II of 1901, which provides that the change of a holding or dispossession for less than a year does not operate as a break in the period of twelve years, while a lease does not prevent the accrual of occupancy rights unless it is for at least seven years. A landholder who parts with his proprietary rights obtains occupancy rights in his home farm at a privileged rate of rent 25 per cent. below the rate generally payable for similar land in the neighbourhood by non-occupancy tenants. This is called 'ex-proprietary right.' In Oudh the so-called 'occupancy tenant' corresponds to the 'ex-proprietary tenant' in the Province of Agra, and no tenant acquires occupancy rights by prescription; the rent of the occupancy tenant cannot be enhanced beyond a rate 12½ per cent. lower than that ordinarily paid for similar land in the neighbourhood by cultivators with no such right. Other tenants in the Province of Agra are merely tenants-at-will, with no rights or privileges beyond those contained in their leases or agreements. In Oudh any person admitted to the cultivation of land acquires certain rights. He is entitled to hold it for seven years at the same rent, and at the end of the period the rent cannot be enhanced by more than 6¼ per cent., whether let to the sitting tenant or to a new-comer. On the death of a tenant the limitation is broken and a fresh contract may be made. Some other peculiarities of tenure are found in the KUMAUN DIVISION and in DEHRA DŪN DISTRICT.

Assessment of land revenue. Benares.

From the earliest times in India the state has been entitled to a share of the actual produce of the land, and the famous settlement made by Akbar merely carried out this principle in detail. For convenience the share of produce was often converted into a money-rate, and when British rule commenced money-rates were not uncommon. The Benares Division

came under the sovereignty of the Company in 1775, but for more than thirteen years the administration was left to the Rājā of Benares, who at first paid a fixed sum of 23 lakhs. After the disturbance of 1781, which arose out of a claim by Warren Hastings for an increased payment in time of war, this was raised to 40 lakhs; but in 1788 Jonathan Duncan, who had recently been appointed Resident at Benares, was authorized to interfere in the system of revenue management, which had become the cause of much oppression and distress. The strict principles laid down by Akbar had been neglected, and the revenue was simply levied at the highest sum which anybody would offer. Duncan fixed standard rates for the estimated produce of different classes of soil and standard prices, and obtained valuations of the produce of *parganas* from the revenue officials called *kānungos*. The share of the gross produce to be taken as revenue varied in different places, and was sometimes as much as a half. Some land paid specific rates per *bīgha*. The estimates were checked by local inquiry and by comparison with earlier assessments. The *Amil* or native collector received one-tenth of the revenue fixed, and various smaller deductions were made in favour of the *kānungos* and the *zamīndārs*. The summary settlement thus made yielded 35¾ lakhs, rising to 38 lakhs. It was then carefully revised with a view to the demand being made permanent; the revision was completed in 1790, and after a few corrections the settlement was declared unalterable by Regulation I of 1795.

Ceded and Conquered Provinces.

A similar system was applied to what is now the Province of Agra, and it was intended to make two settlements for three years each and a third for four years, and then fix the demand in perpetuity. But the Court of Directors refused to sanction a permanent settlement, and short-term assessments were continued. The system was, however, very defective. It usually depended on the estimates of the *kānungos* and the accounts of the *patwāris*, both of which were unreliable, checked by information derived from enemies of the *zamīndārs*.

Regulation VII of 1822.

After much discussion, Regulation VII of 1822 provided new and improved methods. These included a survey, the preparation of a careful record of all rights, and a description of the rates of cash-rents and the method of division of produce in grain-rented land. The assessment was regulated so as to leave the *zamīndārs* a net profit amounting to 20 per cent. on the revenue payable by them. This Regulation marks the first advance towards a systematic and detailed

assessment on the rental 'assets' of each village; but the inquiries involved were elaborate and minute, and during the next ten years little progress was made. In 1832 it was stated that the settlement of one District would not be finished for sixty years. A good deal of information was obtained regarding actual 'assets' and rates; but in determining the 'assets' attention was chiefly paid to estimates of the produce, which were calculated by various methods, while the process of bargaining between the Collector and the *zamīndār* still continued. A few officers had already realized that the simplest way to ascertain the 'assets' was to obtain a correct rent-roll. In 1832 inquiries into the amount of produce were stopped, and Regulation IX of 1833 finally laid down the new procedure. Deputy-Collectors were appointed to assist in the supervision and miscellaneous work. Village maps and a field-book were prepared by revenue surveyors, and made over to the *tahsīldār* and *kānungo* for completion. A rent-roll was then prepared, and statements of the revenue demand, receipts, and balances for ten years were drawn up. The Collector inspected the village and fixed the demand on a consideration of these papers, the Government share of the rental 'assets' amounting to 66 per cent. or two-thirds. The settlement thus made was fixed for a period of approximately thirty years in each District, and this has been the ordinary term in all later settlements.

Regulation IX of 1833.

Second regular settlement.

Various improvements were made in the second regular settlement. The assessments were based upon the average rental 'assets' of estates, as to which more accurate information had now become available. But the *patwāris'* papers were still far from reliable, and the 'assets' were calculated on rates of rent found by the Settlement officer to be paid in the locality. *Parganas* were divided into circles, the soils in each circle were classified, and standard rates of rent were selected for each class. Up to 1868 the soil of each field was separately classified, but in that year the work of checking soil classifications was lightened by a system of demarcating blocks of soils on village maps, invented by Mr. (now Sir) Charles Elliott. It is important to notice that the estimated rental, on which the assessment was based, might be higher than the amount actually paid in a given village, but it represented the rental which the Settlement officer believed, from his inspection of similar villages, could be realized. The proportion of rental 'assets' taken in this settlement was fixed at 50 per cent., or one-half, and has not been altered since.

In spite of frequent recommendations by the Government of India, the Court of Directors had refused to sanction a permanent settlement in the early years of the nineteenth century. When the second regular settlement was commencing the Mutiny suddenly broke out and threw back progress in every direction. Famine in 1860 caused more depression, and the idea of a permanent settlement was revived. While details were being discussed, important facts were discovered. In some tracts rents were found to be increasing enormously, while in others they were so low that an assessment at the rate prevailing in neighbouring tracts would have been excessive. In 1874 the question was laid aside for a time, but a few years later financial considerations led to the issue of rules that settlements were to be revised only where an increase of revenue was expected, or where the distribution of the old assessment had become unequal. In 1882 an attempt was made to devise a scheme by which revenue should be enhanced only in the case of an increase in the area under cultivation, a rise in prices, or an increase in production due to improvements made at Government expense. Detailed criticism showed the impracticability of the scheme, and the idea of a permanent settlement was abandoned in 1885. Permanent settlement.

The discussion led, however, to simplification of procedure. As early as 1872 several officers had expressed the view that the *patwāris'* records could be so improved in accuracy as to form a reliable basis of assessment, and in the Rāe Barelī District of Oudh they had in fact been so used. Steps were taken to provide for more careful preparation and check of these papers, and revised settlement rules were issued in 1884 and 1886. Briefly, the change made lay in the fact that, while the important factor in assessment hitherto had been the *pargana* or circle rate ascertained by inquiry and selection, the new system took the actual rent-roll recorded by the *patwāri* as the basis of the assessment and used the *pargana* or circle rates as a check. No prospective increase in rents, except an increase which could be claimed at once, can now be considered in calculating the 'assets.' Concessions are made for improvements carried out at the cost of private individuals or by loans from Government. In 1894 the cost of settlements was materially cheapened by improvements in the method of survey and revision of records, and the re-settlement of a District now takes only about three years instead of six to ten years as at the second settlement. Third regular settlement.

In Oudh the assessment has been one-half of the rental Oudh.

'assets' since annexation. A summary settlement was made in 1856, but the records generally perished in the Mutiny. A second summary settlement followed in 1858, and the first regular settlement was made between 1860 and 1878, and the second between 1893 and 1903. The rules in force have been similar to those in the Province of Agra.

Incidence.

The incidence of land revenue is approximately half of the incidence of rent 'assets,' which has already been discussed. There is no definite relation between the assessment and gross produce. The most recent estimate places the share of the gross produce received by the landlord at one-fourth to one-fifth in grain-rented tracts and one-sixth to one-seventh in cash-rented areas, and the revenue demand is rather less than one-half of these proportions. There is no difference in the standard of comfort or in the prosperity of the masses between the permanently-settled Districts of the Benares Division and the adjacent Districts of Agra and Oudh where periodical revisions are made, though it was calculated in 1889 that the Benares Division, under the rules prevailing elsewhere, would yield a revenue 15 to 20 lakhs higher than its present assessment of about 47 lakhs. The experience of the famine of 1896–7 showed that no connexion can be traced between the incidence of the land revenue demand and distress due to famine, which depends on other more important factors.

Suspension and remission of revenue.

In agricultural calamities of any kind a Collector has power to postpone the collection of revenue for six months, and a Commissioner for a year longer. If great loss of crops takes place, the Government may suspend or remit revenue and at the same time order the suspension or remission of rent. The policy of giving immediate relief is followed, and when scarcity is imminent, owing to the failure of rains, the agricultural position is closely watched. In *mahāls* subject to fluvial action the assessment is revised every five years, and a similar system is now being introduced into the whole of BUNDELKHAND, which is peculiarly liable to fluctuations in prosperity.

Restrictions on transfer.

(United Provinces) Act II of 1900 has provided a system of entail in OUDH which can, however, be applied only in the case of *talukdārs* and grantees whose estates are subject to the rule of primogeniture. Distress and indebtedness in Jhānsi District led to the enactment of the Jhānsi Encumbered Estates Act (XVI of 1882), which provided for inquiry into debts by a special judge, and for liquidation of the amounts found to be justly due, with the aid of loans from Government.

The operations were successful; but the effect was not lasting, as there was no restriction upon the right of transfer, and the proprietors, whose debts had been liquidated, soon began to incur fresh liabilities. Similar provisions have now been applied to the whole of BUNDELKHAND by (United Provinces) Act I of 1903; and this has been supplemented by another Act (II of 1903), which limits alienation of land, by either sale or mortgage, from a member of specified agricultural castes to members of other castes.

A large revenue is derived from the opium monopoly, which is, however, an item of Imperial receipts. The administration is directed by an Opium Agent, who is now appointed from the Indian Civil Service in these Provinces, though entirely subordinate to the Board of Revenue in Bengal. He is assisted by twenty sub-deputy and about thirty assistant opium agents. The cultivation of poppy without a licence is forbidden under Act XIII of 1857 in all parts of the Provinces, except Jaunsār Bāwar to the north of Dehra Dūn. It is allowed only in certain Districts selected so as to render supervision easy, and it is forbidden in the neighbourhood of most large cities to prevent smuggling. The largest area is in Oudh and the Agra Division; but cultivation is also permitted in parts of the Benares, Allahābād, Rohilkhand, and Gorakhpur Divisions. During the rains cultivators collect at convenient centres and receive advances for the coming season. The poppy is sown in October, and the opium is obtained by lancing the heads and scraping off the dried juice in the following February and March. The opium is collected, weighed, and classified at fixed centres, where the cultivators are paid at rates varying with the class of opium supplied by them. It is then packed and forwarded to the factory at Ghāzīpur, the head-quarters of the Agent. Here it is reduced to a uniform consistence, which varies according as the drug is intended for export or for consumption in India. The accounts of the cultivators are finally adjusted after the opium has been again examined in the factory. In 1903 they received a little more than Rs. 6 per seer. Opium.

The principal statistics of opium cultivation and production are given on the following page.

The system of giving advances for cultivation and also for the construction of wells makes poppy cultivation popular within limits. High castes object to growing poppy, both on religious grounds and because the cultivation requires a great deal of light labour. In the case of low castes this is supplied

by the women and children of the cultivators; and the area undertaken by each cultivator is limited by the amount of domestic labour which he can command, as the profits rapidly diminish when hired labour is required. The crop which competes most with the poppy is wheat, especially when the cultivators anticipate an unfavourable season, or high prices

Years.	Area in acres.	Number of chests for export.	Gross value.	Net revenue.
			Rs.	Rs.
1881–90 (average) .	259,182	28,477	3,33,23,530	2,07,89,988
1891–1900 (average)	289,163	21,509	2,69,65,808	1,47,26,975
1901 . . .	386,262	23,007	3,38,60,555	1,69,12,909
1903 . . .	374,817	22,424	2,87,36,510	59,78,265

for wheat. The net revenue depends chiefly on the price realized for the opium exported, which is technically known as 'provision' opium, and to a small extent upon the consumption of excise opium, the cost price of which, at present taken at Rs. 8½ per seer, is credited to the Opium department.

The Salt department of Northern India, including other Provinces, is administered by a Commissioner directly under the Government of India, with a Deputy-Commissioner and a Personal Assistant. In the United Provinces there are two divisions of the Internal branch, each under an Assistant Commissioner, with head-quarters at Agra and Allahābād respectively; the Agra Division contains three circles and the Allahābād two, each in charge of a Superintendent.

To prevent the illicit manufacture of salt, licences are issued under Act XII of 1882, and the rules made under it, which prohibit the manufacture of salt, saltpetre, every form of sulphate and carbonate of soda, and all other substances made from saline earth, except in accordance with the terms of the licences. The annual charges for these are Rs. 2 for crude saltpetre, or sulphate of soda (by artificial heat), or carbonate of soda; Rs. 10 for sulphate of soda by solar heat; and Rs. 50 for refined saltpetre, including eduction of salt. Purified salt may not be removed from a factory till after examination by an officer of the Salt department and payment of the excise duty of Rs. 1½[1] a maund (82⅔ lb.). Unrefined salt, which is so impure as to be inedible, may be excised for industrial purposes on payment of R. 1 a maund. Refiners, if they prefer it, are also allowed to destroy in the presence of

[1] Reduced from Rs. 2½ to Rs. 2 in 1903, and to Rs. 1½ in 1905.

an official the salt produced by them. Sulphate of soda must be examined by the salt officials before it is allowed to leave a factory; but it is not liable to any duty, and other substances may be disposed of without examination, though the preventive staff exercises a very close supervision over all licensed factories.

The quantity of salt and refined saltpetre educed in recent years is shown below, with values where these could be ascertained. Crude saltpetre is not included, as no account is kept of its manufacture:—

Minerals.	1880–1.		1890–1.		1900–1.		1903–4.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		Rs.		Rs.		Rs.		Rs.
Purified salt	1,344	..	1,504	1,38,179	1,301	1,31,176	1,777	1,67,076
Impure "			444	..	3,150	..	3,706	..
Refined saltpetre .	4,150	6,21,412	6,566	10,94,650	4,448	9,68,744	5,526	12,03,544

The consumption of salt in the Provinces has increased from 2,656,000 maunds in 1880–1 to 3,698,000 in 1890–1, 3,685,666 in 1900–1, and 3,974,462 in 1903–4, representing a consumption in seers per head of about 2·4, 3·3, 3·1, and 3·3 respectively.

The amount of salt produced locally does not form 1 per cent. of the total amount consumed in the Provinces, more than half of which comes from Sāmbhar in Rājputāna. Saltpetre, both refined and unrefined, is largely exported to Calcutta, and the manufacture depends to a considerable extent on the demand and price there. Thus the number of licences issued for manufacture of crude saltpetre varied from 9,239 in 1895–6 to 4,896 in 1900–1 and 5,015 in 1903–4.

The receipts of the Salt department in 1900–1 were: licence fees, Rs. 22,000; duty, Rs. 89,000; total, Rs. 1,11,000; and in 1903–4 Rs. 20,000, Rs. 73,000, and Rs. 93,000 under the same heads.

Excise.

The Excise department is administered by a Commissioner of Excise subordinate to the Board of Revenue. The superintendence in Districts is entrusted to a member of the District staff in addition to his ordinary duties, assisted in most cases by an excise inspector. The excise revenue is derived from three main heads—liquor, opium, and drugs—and consists of duty and licence fees for preparation or vend.

Liquor.

The excise receipts from liquor, which form about 70 per cent. of the total excise revenue, fall under various heads.

Country liquor is usually manufactured in certain distilleries belonging to Government by licensed distillers, who supply their own plant and material, and pay a licence fee of Rs. 3 a month per still. When liquor is issued for retail vend, a still-head duty is levied which is in most Districts Rs. 2½ per gallon of London proof and Rs. 1–14 per gallon of 25° under London proof. The duty is higher in a number of large towns. The right to retail liquor at each of the licensed shops is sold by auction. In the less accessible tracts on the northern, eastern, and southern boundaries of the Provinces, the combined right to manufacture and sell country liquor at specified shops is sold by auction, and no still-head duty is levied. The right to sell the sap of palm-trees (*tāri* or *sendhī*) is also sold by auction, and in some Districts this includes the preparation of fermented liquors made from herbs or rice. Rum is made in a private distillery near Shāhjahānpur after European methods, and pays a duty of Rs. 4 per gallon when issued for consumption in these Provinces or the Punjab, Rs. 5 in the case of exports to the Central Provinces, and Rs. 6 in the case of Assam and Bengal. A second licence for manufacturing rum has recently (1904) been given to a firm in Cawnpore. Malt liquors are brewed after European methods in private breweries at Mussoorie, Lucknow, Nainī Tāl, and Rānīkhet, and a duty of one anna per gallon is levied. No duty besides a licence fee is levied on imported European liquors. The monthly licence fee is ordinarily Rs. 32 for wholesale and Rs. 16 for retail vend, and this includes the right to sell country rum and beer. The receipts on account of country liquor have varied from an average of 34½ lakhs in 1881–90 and 33½ lakhs in 1891–1900, to 43 lakhs in 1900–1, and 61 lakhs in 1903–4. The receipts in the same periods have been: for English liquor (including duty on rum exported to other Provinces), 3 lakhs, 4½ lakhs, 5¾ lakhs, and 8¼ lakhs; and for *tāri*, 1 lakh to 1¾ lakhs.

Drugs.

The drugs, other than opium, used in the Provinces are those derived from the hemp plant (*Cannabis sativa* or *indica*). Both *gānja* (the unfertilized female flowers) and *charas* (the resin) are smoked, while *bhang* (the dried leaves) is used for the preparation of a drink or mixed with sweetmeats. *Gānja* is obtained from Bengal, the Central Provinces, or Central India, and pays a duty varying from Rs. 6 to Rs. 9 per seer in the case of Bengal, and Rs. 4 in other cases. *Charas* is chiefly imported from Central Asia, but a little is made in Kumaun, and it pays a duty of Rs. 4 to Rs. 6 per seer. The

right to sell all three drugs, including *bhang*, which is collected from the wild plant in many Districts and from the cultivated plant in Farrukhābād, is sold by auction[1]. The total receipts have risen from an average of 5¾ lakhs in 1881–90 and 8¼ lakhs in 1891–1900, to 12¾ lakhs in 1900–1, and 18¼ lakhs in 1903–4.

Opium. Opium is supplied from the Ghāzīpur factory through District treasuries to licensed vendors at a price varying in different Districts from Rs. 16 to Rs. 18 per seer. The difference between this price and the cost of the opium, which is taken at Rs. 8½ per seer, is credited to excise receipts. In some Districts, chiefly those in which poppy is grown, the Government treasurers and their assistants are allowed to sell the drug; but the right to sell at licensed shops is sold by auction. The total receipts have risen from an average of 7 lakhs in 1881–1900 to 7½ lakhs in 1900–1 and 8·3 lakhs in 1903–4.

General. The total net receipts from excise have increased from an average of 51 lakhs in 1881–90 and 54 lakhs in 1891–1900 to 70 lakhs in 1900–1 and 97 lakhs in 1903–4, and the incidence of net receipts per head of population in annas has similarly risen from 1·3 to 1·7, 2·3, and 2·9. This increase is largely owing to higher taxation, for it is the policy of Government to raise excise duties as long as the danger of smuggling is not incurred. Public opinion is consulted in regard to the location and number of shops. Although the use of intoxicants is forbidden by the sacred books of both Hindus and Muhammadans, excise was a form of revenue under native rulers. The moderate use of opium as a drink or in pills is not usually condemned, though smoking the drug is reprobated. Liquor is used chiefly by the lower castes, and when consumed by members of higher castes the practice is concealed, except in the case of individuals who have abandoned the strict rules of caste. The highly literate caste of Kāyasths is making successful efforts to discourage intemperance among its members. The use of *bhang* as a drink is hardly more injurious than the use of tea; but *gānja* and *charas*-smoking are condemned. The modern religious movements all favour temperance; but the effect of English education is double. In so far as it weakens the caste system, or tends to act as a solvent on orthodox beliefs, it removes a check on intemperance,

[1] In 1906 a duty of Rs. 8 per acre was levied on the cultivation of the hemp plant, and a duty of Rs. 4 per *maund* on *bhang* imported from certain Districts where it is cultivated or grows spontaneously.

especially in regard to the use of liquor. On the other hand, it has been beneficial in producing higher ethical standards.

Stamps.

The stamp revenue is divided into two main heads, according as it is derived from judicial or non-judicial stamps. The net receipts under the first head have risen from an average of 46 lakhs in 1881–90 and 53 lakhs in 1891–1900 to 62 lakhs in 1900–1 and 63 lakhs in 1903–4. Variations are due to the same causes as variations in litigation, which have already been referred to, and to alterations in the law. Net receipts from non-judicial stamps have risen from an average of 15 lakhs in 1881–90 and 17 lakhs in 1891–1900 to 18 lakhs in 1900–1 and 19 lakhs in 1903–4. They are largely affected by agricultural conditions.

Income tax.

The net revenue from income tax has varied from an average of 21 lakhs in 1886–90 and 23 lakhs in 1891–1900 to 25 lakhs in 1900–1, and 20 lakhs in 1903–4.[1] Only about three persons are assessed in every 2,000 of the population, and the incidence is 8 pies per head.

Local self-government. District and local boards.

It has been explained in dealing with finance that up to 1871 the only revenue over which the Provincial Government had free control was that raised from a few sources, such as ferries, pounds, and cesses on land. The cesses were voluntary payments which the *zamīndārs* engaged to pay along with land revenue. They replaced the old liability to maintain roads, post lines, and village police, and also provided funds for schools. In 1871 the cesses received legal sanction, and then amounted to 10 per cent. of the revenue demand in the Province of Agra[2], and 2½ per cent. in Oudh, where the *zamīndārs* were still liable for the pay of the village police. The receipts formed a Provincial fund, from which allotments were placed at the disposal of District committees, half the members of which were non-officials appointed by Government. These committees replaced a number of distinct bodies which for varying periods had assisted District officers in the management of roads, education, and dispensaries, and their functions were confined to these matters. The rates were raised in 1878 by an additional famine cess of 2 per cent. on the revenue in each Province, and from the same year the difference between Provincial and Local expenditure became more clearly marked.

In 1882 a scheme was developed which became law as

[1] In this year the limit below which exemption from income tax may be claimed was raised from Rs. 500 to Rs. 1,000.

[2] In the permanently settled Districts the cesses take the form of an acreage rate.

Act XIV of 1883. This provided for a board in each District, with power to supervise, subject to certain restrictions, the control and administration of roads, schools, dispensaries, and similar public institutions, besides other local works for the comfort, convenience, or interest of the public. There were also local boards in *tahsīls*, but these had no independent authority and no longer exist. The Act provided for the establishment of a fund in each District, to which were credited the receipts from local rates, less deductions for certain items, such as watchmen, District post, Provincial railways and canals, and the famine rate, which were not under the control of the boards. The net receipts on account of pounds and ferries were also allotted, and the District fund obtained other receipts from the services controlled by the board. The practical effect of the arrangement made was that the cost of the services controlled by the boards exceeded the funds at their disposal, and for some years the contribution from Provincial revenues required to make up the deficit was exactly calculated to produce equilibrium. The District funds thus had no balance from year to year, and the system resembled that of Provincial finance before 1870. Up to 1897 the boards were chiefly consultative bodies; and the members, with some exceptions, took little interest in any branch of the administration, except schools and hospitals, partly no doubt owing to the absence of financial independence.

In 1897 steps were taken to make the District funds real entities. Opening balances were allotted from a grant of 4 lakhs made by the Government of India, and an attempt was made to ascertain the normal income and expenditure in each District. Annual grants were then made from Provincial revenues sufficient to provide a small margin, and it was contemplated to fix these for a term of years; but this was not found possible, owing to the unsettled condition of Provincial finance. Balances were, however, carried forward from year to year; and (U.P.) Act II of 1906 has paved the way for more complete financial independence by abolishing all deductions from the rates, except those for village watchmen. By (U.P.) Act III of 1906 the sphere of usefulness of the boards has been considerably enlarged. The famine cess imposed in 1878 was abolished in 1905, and in the same year large grants-in-aid were made from Imperial revenues. In times of scarcity District boards open small relief works to test the existence of distress; but when this is established, the works are taken over by the Public Works department. In 1903-4 there were 48 Dis-

trict boards in the Provinces, with 938 members, of whom 255 were appointed *ex officio*, 74 were nominated, and 609 were elected. The general statistics of the income and expenditure of the boards since 1897–8 are given in the table on page 154.

Municipalities.

When the province of Benares was acquired, it was found that minor sanitary improvements were regularly carried out by the shopkeepers of Benares city, who privately contributed a small sum annually and arranged for its expenditure. Towns were, however, usually administered by the *kotwāl* or police officer, who was responsible for elementary conservancy and the regulation of the residences of 'butchers, hunters of animals, washers of the dead, and sweepers,' in addition to his police duties. The early British administration of towns was confined to the introduction of regular police in the more important places; but by Regulation XVI of 1814 ward committees, consisting of householders, were appointed in the more important places to assess and collect a tax from which subordinate police were paid. Act XV of 1837 made it legal to apply savings from this rate to improvements in the towns where it was levied, and committees of non-official persons were appointed to assist in the supervision. The first real attempt at municipal self-government was effected by Act X of 1842. This authorized the Government to appoint representative committees in any town where two-thirds of the householders applied for the extension of the Act. The committees so formed had power to impose a rate of 5 per cent. on the annual value of premises, and the proceeds were applied to improvements. The Act was not successful and was repealed by Act XXVI of 1850, which gave the Government a freer hand in the constitution of municipal committees, and also allowed town duties or octroi to be imposed, while the committees were authorized to make rules, with the sanction of Government, defining and prohibiting nuisances. Act XXVI of 1850 was applied to Oudh, but in 1864 a special Act was passed to regulate the Lucknow municipality. In 1867 the municipal law in Oudh was amended, and a year later an important Act (VI of 1868) was passed for the Province of Agra. This provided for the gradual introduction of the elective system, and enlarged the basis of taxation by permitting a tax on houses and land up to $7\frac{1}{2}$ per cent. of the annual value, and also taxes on professions and trades, on carriages and animals used for draught or burden, and tolls, besides octroi. The duties of the municipal committees were

defined more clearly, and expenditure on education was permitted. The law in both Provinces was assimilated by Act XV of 1873, which made a few alterations and conferred power to regulate carriages, &c., plying for hire. The next important change was a part of the general scheme for developing local self-government which was set on foot in 1881. Act XV of 1883 provided for the elective principle in all cases, and was extended to all municipalities, except six which were considered backward. Increased functions were allotted to Commissioners with regard to the supervision of municipal work, and the powers of the boards to make rules for the prevention of nuisances were more clearly defined. The Acts of 1873 and 1883 were replaced by (United Provinces) Act I of 1900, which provided for the growing needs of municipal administration. Larger powers were given to deal with matters of public interest and convenience, such as the erection of buildings and the regulation of dangerous and offensive trades, and new taxes were legalized. Since the passing of the Act of 1883 municipal self-government has progressed rapidly, and methods of conservancy, collection of taxes, and the like have been much improved. A great deal has been done to improve the octroi system by facilitating the grant of refunds, and by establishing bonded warehouses; and in Cawnpore, where through trade is very important, a terminal tax at low rates with no refunds has been adopted. The position of municipal servants who receive no pension has been improved by the establishment of provident funds. In 1898 a system of peripatetic audit was instituted to supervise the accounts of both District boards and municipalities, which has been of great value. Municipal self-government is more successful than the District board system; but close supervision and control are still required, and the District Magistrate is generally chairman, though elected by the board in most places. In 1901 there were 104 municipalities, with a total population of 3·3 millions. The population of six towns was over 100,000, that of seventy-two ranged between 10,000 and 100,000, and that of twenty-six was less than 10,000. No change was made till 1904, when sixteen towns were constituted 'notified areas' under (United Provinces) Act I of 1900. The administration of these is simpler than in municipalities; they are managed by small committees appointed by the Government, and only selected portions of the Act are applied to them.

The old law of 1814, requiring the inhabitants of important towns to maintain police for watch and ward, was amended in 1856. Act XX of 1856.

1816, and Act XX of 1856 consolidated these rules, and included the provision made in 1837 for expenditure on sanitation. Act XX of 1856, which may be applied to any place not merely an agricultural village, provides for the levy of a rate on annual value, or a tax on circumstances and property, the proceeds being applied to watch and ward and sanitation. The assessment is made by a small committee, which is generally consulted in regard to the expenditure.

Municipal finance.

The general features of municipal finance are shown in the table on page 155. Octroi supplies about half of the total income, and the largest single item of expenditure is on conservancy. The incidence of taxation per head averaged Rs. 1-2-8 in 1900-1 and Rs. 1-4-1 in 1902-3. It is highest in the hill stations, where it rises to Rs. 7-12-11 in Mussoorie and Rs. 7-15-0 in Nainī Tāl. The total number of members of municipal boards in 1903-4 was 1,395, of whom 1,030 were elected; 345 members were officials and 1,050 non-officials; 267 were Europeans and 1,128 natives. There are now only two places in which the elective principle is not in force.

Public Works.

The Public Works department is divided into the Buildings and Roads branch and the Irrigation branch, each of which is administered by a Chief Engineer, who is also a Secretary to Government. The Provinces are divided into three circles and ten divisions for the administration of buildings and roads, and into four circles and twenty divisions for irrigation purposes. Each circle is in charge of a Superintending Engineer, and each division in charge of an Executive Engineer. The whole of the irrigation works constructed or maintained by Government are in charge of the department. Nearly all metalled roads, and also bridges on second-class roads, and generally all works costing more than Rs. 1,000 are in charge of the Buildings and Roads branch, except in municipalities.

Three railways have been constructed at the cost of Provincial revenues: namely, the branch from Dildārnagar on the East Indian Railway to Tārī Ghāt opposite Ghāzīpur, the Cawnpore-Achhnerā Railway, and the Lucknow-Sītāpur State Railway; but they were transferred to the control of the Director-General of State Railways in 1891. The most important irrigation works within the last twenty years have been the construction of the Betwā Canal, the Fatehpur branch of the Lower Ganges Canal, the Māt branch of the main Ganges Canal, improvements in the Rohilkhand and Tarai Canals, and extensive drainage operations in the Doāb Districts of the Meerut and Agra Divisions. The table on page 153 shows

that expenditure on other public works rose from an average of 29 lakhs in 1881–90 to an average of 33 lakhs in 1891–1900. The road system of the Provinces was fairly complete by 1881, and improvements since then have chiefly been devoted to metalling. In particular, cart-roads have been made in Kumaun from the foot of the hills to Nainī Tāl, Rānīkhet, Almorā, and the tea plantations and along the pilgrim routes. Important bridges at Kichhā between Bareilly and Kāthgodām and over the Hindan river in Meerut and Muzaffarnagar Districts may be mentioned, and others are now (1906) being constructed in Gorakhpur and Sultānpur. The Thomason Hospital and Lunatic Asylum at Agra, the Muir Central College at Allahābād, the Thomason Engineering College at Roorkee, the Judicial Commissioner's Court at Lucknow, the present Government House and Secretariat offices at Nainī Tāl, and Judge's courts at Fyzābād, Alīgarh, and Gondā have all been built or considerably improved within the last twenty years. Owing to the encroachment of the Ganges, the head-quarters station and offices of Balliā District have been reconstructed. Large schemes for water-supply have been undertaken since 1890 in Agra, Allahābād, Benares, Cawnpore, Lucknow, and Meerut, and drainage schemes in Agra, Benares, Farrukhābād, and Cawnpore. Drainage schemes for Lucknow and Fyzābād are now under consideration. Such schemes are drawn up under the superintendence of the Sanitary Engineer with Government, who ranks as a Superintending Engineer.

Army.

The total strength of the army in the Provinces in 1903 was: British troops, 16,554; Native, 15,428; total, 31,982. The whole area of the Provinces is included in the Eastern Command and forms part of three divisions. The Meerut division includes Meerut, Chakrātā, Muttra, Roorkee, Agra, Almorā, Bareilly, Chaubattiā with Rānīkhet, Lansdowne, Shāhjahānpur, and Dehra Dūn; the Lucknow division, Lucknow, Cawnpore, Fyzābād, Fatehgarh, Allahābād, Benares, and Sītāpur; and the Mhow division, Jhānsi. There is an arsenal at Allahābād, an army clothing (formerly gun-carriage) factory at Fatehgarh, and a harness and saddlery factory at Cawnpore. There are volunteer corps at Allahābād, Lucknow, Benares, Gorakhpur, Cawnpore, Dehra Dūn, Nainī Tāl, Bareilly, Mussoorie, and Agra, with detachments at many other places. The total strength of the volunteers in 1903 was 4,901, of whom 580 were Light Horse or Mounted Rifles.

The Rāmpur State maintains a regiment of Imperial Service cavalry, 317 strong in 1904, besides State troops classed as

follows: artillery, 206 with twenty-three guns; cavalry, 152; infantry, 1,159; and *alighols* or irregulars, 692. The army of Tehrī State consists of 113 infantry with two cannon.

Police.

Under native rule regular police existed only in the larger towns, and *zamīndārs* were held responsible for law and order in rural tracts. In the British administration a distinction has generally been made between the police maintained to keep the peace and to prevent and detect crime, and the police whose duty was confined to watch and ward. A force for the former purpose was established at the cost of Government, while the watchmen or *chaukīdārs* were paid from a special cess in the larger towns and were long maintained by the *zamīndārs* in rural areas, receiving grants of land.

Regular police.

The regular police up to the time of the Mutiny consisted of a number of establishments having no connexion with each other. During the Mutiny these forces melted away with startling rapidity; and on the restoration of order a military police force was raised, consisting of a battalion of infantry and cavalry in each Division, the scale providing for one man to every 1,260 of population and every 4½ square miles of area. In 1860 a Commission sat at Calcutta, and its conclusions were discussed by a local committee sitting at the same time, and by another local committee in 1863. The result was the organization of a force under Act V of 1861, on the model of the Irish Constabulary, in which all the miscellaneous establishments were absorbed. An Inspector-General had already been appointed in 1860, and subordinate to him were two Deputy-Inspectors-General and a Superintendent of Police in each District, except the Kumaun Division. There was also a staff of inspectors, sub-inspectors, head constables, and constables. At the first organization on these principles the strength of the regular police was 32,828 men, and the cost was 49·2 lakhs; but by 1877, when the two Provinces had been amalgamated, this had been reduced to a force of 22,767 men, costing 35·8 lakhs. In 1890 a local commission inquired into the working and condition of the force, and recommended an addition of 9½ lakhs to the expenditure of 37 lakhs then incurred. Reforms costing 8½ lakhs were sanctioned, and other reforms costing several lakhs in addition are in progress[1]. The force was then about 25,000 strong, and the changes proposed added only a few hundred men. In 1901 the regular force cost 51·7 lakhs, including superintendence (1·6 lakhs), District executive

[1] Further reforms suggested by the Police Commission of 1902–3 are now being carried out.

force (48·5 lakhs), and railway police (1·5 lakhs). In 1904 the police force was administered by an Inspector-General, with three Deputies (one of whom was in charge of railways) and two Assistants, forty-six District Superintendents, two Railway Superintendents, and thirty Assistant Superintendents. In recruiting constables, regard is had to caste, physical development, and character. Less than a quarter of the men can read and write, but all the officers are literate. Head constables are recruited from the ranks, and are eligible for higher promotion; but 85 per cent. of the sub-inspectors appointed annually are now recruited directly from men who have passed the University Entrance examination, and only 15 per cent. are promoted head constables. Sub-inspectors are trained at the Police Training School at Morādābād. Increases in the pay of police since the commission of 1890 and the direct recruitment of officers have worked great changes in the force. The Police Training School, founded in 1893, has had valuable results, and large sums have recently been spent in improving the accommodation provided for police officials. Several criminal tribes, such as Barwārs in Gondā, Sānsiās in Kherī, Sanaurias in Jhānsi, and Doms in Gorakhpur, are under surveillance, and efforts are made to provide land for cultivation by them; but progress in reform is slow. There is a reformatory for juvenile offenders at Chunār. No separate detective staff exists; but one of the Deputy-Inspectors-General collates weekly reports received from the Districts, and circulates an account of special crime. Identification of criminals by means of anthropometry was commenced about 1895; but since 1900 more reliance has been placed on finger-prints. The armed police is specially recruited and is armed with Martini rifles. The railway police is under a Deputy-Inspector-General and two Superintendents.

Rural police.

The village *chaukīdārs* in the Province of Agra were paid directly by the *zamīndārs*, generally by grants of land and a share of produce, up to the time of the first regular settlement. From 1833 it was left to the Settlement officer and Magistrate to decide whether the *chaukīdārs* should be paid in cash from the proceeds of a rate at 3 per cent. on the annual value of land, and such a system was introduced in many Districts. From 1855 this system was gradually extended to all Districts. In Oudh, after the Mutiny, it was decided to revert to the old method of holding the *zamīndārs* responsible, and this continued up to 1895, when a system of cash payments was begun and a cess was levied under (United Provinces)

Act V of 1894. The number and cost of the *chaukīdārs* is shown in the table on page 156.

Cognizable crime.

The number of criminal cases dealt with by the police and the main results are given below:—

	Average of five years ending 1901.
Numbers of cases reported	191,558
" " decided in the criminal courts .	60,248
" " ending in acquittal or discharge	6,944
" " ending in conviction . .	53,304

Jails.

The administration of the Jail department is in charge of an Inspector-General of Prisons, who is a member of the Indian Medical Service. Each of the Central jails is in charge of a Special Superintendent, who also administers the District jail at the same place. Other District jails are in charge of Civil Surgeons. There is a jail at the head-quarters of almost every District. The main statistics are given in the table on page 157. In 1903 there were six Central jails, forty-four District jails, and six subsidiary jails, the total number of inmates being 23,147. The cost was nearly 12 lakhs, or Rs. 51·4 per head. The principal industries carried on in jails are weaving cotton cloth, carpets, blankets, and matting, grinding corn, and gardening. In 1903 a sum of 2 lakhs was earned. Tent-making is confined to the Fatehgarh Central jail, and the tents are chiefly made for the public service. Forms are printed in the Central jails at Nainī near Allahābād, and at Lucknow. The mortality in jails is much below that of the population at large, and it is found that prisoners generally increase in weight. Distress invariably adds to the jail population, and in 1897 the number rose to 36,257.

Education. History.

A college was founded at Benares in 1791 to cultivate the laws, literature, and religion of the Hindus, and to supply qualified assistants for European Judges. In 1823 the Agra College was established from funds left by Pandit Gangādhar. Eight schools were opened at various times between 1825 and 1837 under the direction of the Educational Committee, which were at first chiefly for Oriental learning. From 1835 English education was fostered in accordance with Lord William Bentinck's minute, inspired by Lord Macaulay. The control of education was made over to the Local Government in 1843, and it was at once decided that indigenous schools should be aided instead of the existing institutions described above, which were expensive and not satisfactory. Indigenous schools consisted of those in which reading and writing the vernacular

in the Nāgari character and a little arithmetic were taught, and those in which Persian, which till recently had been the court language, was the medium. Textbooks in the vernacular were for the first time drawn up and circulated, and rewards were given to deserving teachers. In 1849 a scheme costing half a lakh was sanctioned, which included the establishment of a model school at the head-quarters of each *tahsīl* in eight Districts, and a visitor-general, with a District visitor and two or three *pargana* visitors, in each District. Five years later the Collector of Muttra induced the *zamīndārs* to subscribe a cess by which primary schools were established for groups of villages, and the system rapidly extended to other Districts. The progress made was commended in the Directors' dispatch of 1854, which laid down a comprehensive scheme for the whole of India. The department was then constituted with a Director, assisted by two Inspectors, and its efforts at first aimed at the establishment of the *tahsīlī* and rural schools described above. With the exception of the two colleges and one high school, secondary education was chiefly looked after by various missionary bodies, which then maintained two colleges at Agra and one at Benares, besides ten schools. District schools were not generally established till 1867. In Oudh the first educational institutions were District schools, chiefly intended to educate the children of the higher classes; these were started by private subscriptions, aided by Government grants, in every District between 1859 and 1862. *Tahsīlī* schools, in some of which English was taught, were opened between 1861 and 1865; and in 1864 a department was constituted with a Director and two Inspectors, and funds were provided for primary education by a cess similar to that contributed in the Province of Agra. When the Provinces were united in 1877 education in Oudh was more backward than in Agra; but much has been done to improve it. University education in the modern sense commenced in 1860 with the affiliation of colleges to the Calcutta University; and in 1872 the growing needs of the Provinces led to the foundation of the Muir Central College at Allahābād, which was intended to be the focus of an improved system. The Allahābād University was constituted in 1887.

Present organization.

In 1904 the department was administered by the Director, an Assistant Director, six Inspectors, and eleven Assistant Inspectors. The professorial staff consists of two Principals, eleven Professors, two Assistant Professors, two Law Readers, and the Principals of the Training College and Reformatory

School The posts of Assistant Director, three Inspectors, two Principals, and six Professors belong to the Imperial service and are filled by recruitment in England; the remaining posts are Provincial and filled in India. Public schools are almost entirely maintained by the District and municipal boards. The Inspector manages District-board English schools, Normal schools, and the Training College, inspects all other English schools in his circle, and exercises a general control over subordinate inspecting officers. The Assistant Inspector supervises vernacular middle schools and the work of the District inspecting officers. The latter include forty-seven Deputy- and eighty-one Sub-Deputy-Inspectors, whose work is confined to all public vernacular schools in the Districts to which they are attached.

University.

Up to 1904 the University Senate consisted of fellows, who were either *ex officio*, or appointed by the Chancellor, or elected by the Senate, with the provisos that the number of elected members might not exceed the number appointed, and that the total number of fellows might not be less than thirty. The Senate appointed a Syndicate from among its members, and also constituted Faculties. In 1904 there were seventeen *ex officio*, forty-two nominated, and forty-two elected fellows. By Act VIII of 1904 the number of fellows may vary between forty and forty-five, of whom ten shall be elected by the Senate or by registered graduates, five by the Faculties, and the remainder nominated by the Lieutenant-Governor in his capacity of Chancellor.

Arts colleges.

The number of Arts colleges was sixteen in 1891, and twenty-eight in 1901 and 1904; but many of these are merely collegiate classes attached to schools. The principal colleges in 1904 were the Government institutions at Allahābād and Benares; aided colleges at Lucknow (Canning College and Women's College), Agra (Agra College), Alīgarh, Bareilly, Gorakhpur, Cawnpore, Meerut; and unaided colleges at Agra (St. John's), Lucknow (Reid Christian College), and Benares (Hindu College).

Oriental studies.

The Government Sanskrit College at Benares imparts instruction in Sanskrit up to the highest standard, while Persian and Arabic are taught in special classes at the Muir College, Allahābād, the Alīgarh College, and in a number of aided institutions. Schemes for the extension of Western methods of study are now under consideration.

Professional colleges.

The Thomason Engineering College at Roorkee, which educates civil and electrical engineers, had 371 students in

1903–4. No degree in engineering is conferred by the University, but certificates of proficiency are given by the college. Since 1896 classes for mechanics, industrial training in printing, photography, and photo-mechanical work, and for art handiwork have been opened. Non-commissioned officers of the British and Native army are also trained here. No colleges teach law exclusively, but in nine institutions classes are held for this subject. A training college for teachers was opened at Allahābād in 1900 and had forty-eight students in 1903–4.

In 1903–4 the total University expenditure was Rs. 49,000, which was met almost entirely from examination fees. Government colleges cost 3·8 lakhs, aided colleges 2 lakhs, and unaided colleges Rs. 84,000. Four years' attendance is required for the attainment of the B.A. degree. The hostel or boarding system is an old one, but has been greatly developed in recent years. In 1903–4, out of 1,944 students in colleges, 796 were residing in hostels, chiefly unaided. The principal statistics of University education are shown below:—

	1880–1.	1890–1.	1900–1.	1903–4.
Matriculation	297	606	810	942
First or Intermediate in Arts or Science	48	204	197	364
Ordinary Bachelors' Degrees	24	105	167	223
Higher and Special Degrees	7	11	29	24

NOTE.—From 1890–1 onwards, the numbers represent all the results at the Allahābād University, including students from other Provinces.

Secondary education (boys).

Secondary schools are divided according to the curriculum into high and middle schools. In the former English is taught up to the standard of the University Entrance and the School Final examinations. Middle schools are divided according as English is or is not taught. The number of secondary schools for boys rose from 487 in 1891 to 502 in 1901 and 508 in 1904; and the number of scholars from 51,420 to 66,746 and 71,827. Of these schools 46 were maintained by Government, including 34 high schools; 313 were maintained by District and municipal boards; 110 were aided schools, and 36 were unaided. Grants to aided schools are given with regard to the class of institution, the expenditure incurred on tuition by the managers, the number of pupils under instruction, and the general condition of the school. The ordinary grants are Rs. 750 for the high section, Rs. 400 for the upper middle section, and Rs. 250 for the lower middle section of a school; but these are liable to reduction, and may also be supplemented by grants at rates not exceeding Rs. 3 for each

scholar in the high or middle section, Rs. 2 in the upper, and Rs. 1½ in the lower primary sections. The proportion of the male population of school-going age under secondary instruction in 1901 was 1·81 per cent. Teachers in middle schools are paid from Rs. 8 to Rs. 25 a month.

Primary education (boys).

Primary schools are divided into two sections. In the lower section reading, writing, arithmetic up to the four compound rules, elementary geography, drawing, object lessons, and drill are taught. In the upper section the same subjects are taught to a higher standard. The number of schools for boys has risen from 4,758 in 1891 to 6,982 in 1901 and 8,070 in 1904; and the number of pupils from 149,262 to 262,659 and 330,387. Up to 1895 the old system of aiding indigenous schools had been gradually discontinued, but it was then revived with very beneficial results. Primary education is almost entirely in the hands of the District and municipal boards, which managed 5,320 schools in 1904, while Government managed only 14; 2,644 were aided, and 90 were privately managed without aid. Teachers in primary schools must hold a certificate of having passed the Normal school examination, unless certificated men are not available. The minimum rate of pay is Rs. 8 a month, and the maximum about Rs. 15.

Female education.

The number of institutions for female education has increased from 391 in 1881 to 499 in 1891 and 637 in 1901, and the number of pupils from 9,422 to 13,870 and 21,314. In 1903 there were 800 institutions with 26,048 pupils. Though numbers have increased the total results are still very small, and in 1901 only 0·62 per cent. of the female population of school-going age was under instruction. There is a direct prejudice against female education in most parts of the Provinces, though the Arya Samāj and a few advanced natives, especially in the larger towns, are striving to remove it. Missionary enterprise has done much, especially in the Meerut and Rohilkhand Divisions, where the American Methodist Mission is at work. In 1900 the Protestant missions in these Provinces had 13,220 girls under tuition, and were attempting to educate 14,245 pupils in *zanānas*. Government has now reopened a Normal school for women at Lucknow, and special efforts are being made by grants from Provincial revenues and District board funds.

Special schools.

In 1904 four training schools for masters, with 475 students, were maintained by Government. One Government school for training mistresses contained twenty-one students, and three private schools had forty-five female students. There

were two medical schools at Agra for male and female students, with 260 scholars on the rolls. An industrial school is maintained at Lucknow, and industrial classes also exist in Christ Church College at Cawnpore. The Agricultural School at Cawnpore contained fifty-nine students, most of whom were attending to qualify as *kānungos*. Commercial classes exist in a few schools and colleges, notably at the Reid Christian College in Lucknow, where shorthand and typewriting are taught. The Imperial Forest School at Dehra Dūn teaches forestry and is divided into two sections. The upper class reads in English for the higher standard or Ranger's certificate, and the lower class in vernacular for the lower standard or Forester's certificate.

European and Eurasian education.

The largest institution for Europeans and Eurasians in the Provinces is the Martinière School at Lucknow, which is entirely independent of Government aid and educates about 275 boys and 75 girls. In addition to this, there were forty schools in 1881, forty-five in 1891, and sixty-eight in 1901, with 3,247, 2,815, and 4,211 pupils. In 1904 there were sixty-nine schools for Europeans and Eurasians, of which fifty were aided, and the number of pupils was 4,376. Of these schools, twenty-one are in the two hill stations—Nainī Tāl and Mussoorie—with nearly half the total number of scholars. The examination results show considerable improvement in secondary education. The main results in 1903–4 are: B.A., 4; First Arts, 14; Roorkee, 32; Matriculation, 7; High school, 136; Middle, 186; and Primary, 258. The scholars chiefly find employment in Government service and on railways.

Muhammadan education.

The backward state of education among Muhammadans is not so marked in these Provinces as in some parts of India. At the outset they resented especially the introduction of English education, and the substitution of the vernacular for Persian. The influence of the late Sir Saiyid Ahmad Khān, who founded a school at Alīgarh in 1875—raised to the status of a college in 1878—has caused great changes in the views held. The proportion of Musalmāns to the total scholars in all public educational institutions is about 15 per cent., which is slightly higher than their proportion to the total population (14 per cent.). It must, however, be noticed that Musalmāns include 36 per cent. of the urban population, and education is much commoner in towns than in rural areas. In 1881 Musalmāns formed 12 per cent. of the students in Arts colleges; they were 17 per cent. in 1891 and 15 per cent.

in 1901. Degrees taken by Muhammadans were 14 per cent of the total in 1891 and 19 per cent. in 1901, and matriculations 18 and 15 per cent. In general school education Musalmāns formed about 21 per cent. of the total in secondary schools in both 1891 and 1901, and 15 and 14 per cent., respectively, in primary schools. The objection that the Government schools make no provision for religious instruction is still felt; and this explains the high proportion of Musalmāns in private schools, where in 1901 they formed 52 per cent. of the total in advanced schools, and 42 per cent. in elementary schools. Judged by the census results for literacy, Muhammadans made slightly more progress than Hindus between 1891 and 1901. The knowledge of English is more common among Muhammadans than among Hindus.

General results. The proportion of the population of a school-going age under instruction has increased from 3·4 per cent. in 1881 to 4·1 per cent. in 1891, 6·1 per cent. in 1901, and 7 per cent. in 1904. For boys it was 12·9 per cent., and for girls only 0·75 per cent. in the latest year. A considerable impetus was given by the revival in 1895 of the system of aiding indigenous education. Between 1891 and 1901 the proportion under secondary education increased from 1·4 to 1·8 per cent., while the increase under primary education was from 4·1 to 7·1 per cent. The census figures of 1901 showed that 578 males and 24 females out of 10,000 of either sex could read and write, and the proportions had increased in ten years by 9 per cent. for both sexes together, 8 per cent. for males and 39 per cent. for females. In the Himālayan tract 1,052 males, and in the Central India plateau and eastern plain 706 males out of 10,000 are literate, but in the western plain only 495. By religion, 41 per cent. of Christians, 24 per cent. of Aryas, and 22 per cent. of Jains are literate; but in the case of Hindus and Musalmāns, who form the bulk of the population, the proportion sinks to 3 and 2·8 per cent. The caste system is responsible to some extent for the backwardness of education. Nearly one-quarter of the total number of Hindus are considered so impure that a member of a higher caste after contact with them is required to bathe. Though the schools are open to all, the admission of a boy belonging to one of these impure castes would be resented. Among the middle-class castes, forming 40 per cent. of the total, education is commonly regarded as a useless luxury. In the case of female education one of the chief difficulties is the paucity of female teachers. The labours of the various missionary bodies have

been especially valuable in the case of female education and the education of the lowest castes. Two principal characters for writing are in use in the Provinces, the Persian and the Nāgari, the latter having many local varieties in a cursive form. Out of every ten literate Hindus nine can read and write Nāgari only, or one of its cursive forms, while among Musalmāns six out of seven know the Persian alphabet only.

The main statistics of educational finance for 1903-4 are shown below. The monthly fees in Government schools vary from 2 to 12 annas in the primary sections to R. 1 to Rs. 2 in the middle sections, and Rs. $2\frac{1}{2}$ to Rs. 3 in high schools. In aided schools the fees must be at least 75 per cent. of those fixed for Government schools. Collegiate fees range from Rs. 8 to Rs. 12 a month. Finance.

	Expenditure on institutions maintained or aided by public funds in 1903-4 from				
	Provincial revenues.	District and municipal funds.	Fees.	Other sources.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.
Arts and Professional colleges	4,00,176	6,910	95,338	77,920	5,80,344
Training and special schools	66,006	89,490	12,056	15,656	1,83,208
Secondary boys' schools	1,21,855	4,53,421	4,30,149	1,73,167	11,78,592
Primary boys' schools	4,717	9,07,650	74,217	28,265	10,14,849
Girls' schools	60,523	70,076	83,945	1,49,236	3,63,780
Total	6,53,277	15,27,547	6,95,705	4,44,244	33,20,773

In 1845, when efforts to spread education were commencing, there was only one native paper in the Provinces not printed in English, and that was in Persian. By 1881 there were 69, and the number rose to 101 in 1891 and 119 in 1901. Of the papers appearing in 1901, 3 were dailies and 3 more were published twice or thrice a week; 11 were in English and 103 in the vernacular (69 in Persian and 34 in Nāgari characters). The total circulation of the vernacular papers exceeds 40,000. The papers with the largest circulations are: the *Rājput* (fortnightly), which is chiefly occupied with the condition of Rājputs; the *Bhārat Jīwan* (weekly), a Hindu paper of moderate tone in politics; the Newspapers.

Sanātan Dharm Patākā (monthly), which supports the orthodox Hindu religion against the Arya Samāj; *Jāsus* (monthly), chiefly concerned with police cases; *Kānyakubj Hitkārī* (monthly), which promotes reforms among Kānyakubj (Kanaujiā) Brahmans. The principal political organs in English are: the *Advocate* (twice a week) and the *Kāyastha Samāchār* (now *Hindustān Review*) (monthly), both of which are strong supporters of the Congress; in vernacular *Al Bashīr* (weekly), which is strongly Muhammadan; *Hindustāni* (weekly), a reproduction of the *Advocate*; *Oudh Akhbār* (daily), a moderate paper which opposes the Congress; *Oudh Samāchar* (weekly), a moderate paper. Taken as a whole the tone of the Press is satisfactory. Government is keenly criticized, often without a due knowledge of the facts. The leading castes, the Arya Samāj, and the *talukdārs* of Oudh all have their own organs. About one-third of the number of papers published in 1901 were in the Muhammadan interest. The *Pioneer* is the chief Anglo-Indian organ.

Registered publications. The total number of publications (books, &c.) registered was 959 in 1891 and 1,449 in 1901. The most striking feature about these figures is the large increase in original works from 723 to 1,399, and the decrease in republications from 104 to 6, and in translations from 132 to 44. Classifying the books by subjects, it appears that in 1901 educational works, which are chiefly school-books, numbered 360, or one-quarter of the total, while in 1891 they had been only 87, or one-eleventh. Books on religious subjects have decreased from 306 to 238, while poetical works have increased from 70 to 266. Novels have risen from 65 to 104. In 1901 the other principal classes of books were History, 77 (59 educational); Language, 196 (178 educational); Philosophy, 44; and Miscellaneous, 387 (73 educational). The headings Arts, Biography, Drama, Voyages and Travels included only 54 books, while out of 30 books on scientific subjects 28 were educational.

Hospitals and dispensaries. The Medical department is in charge of an Inspector-General of Civil Hospitals. Every District but Almorā is in charge of a Civil Surgeon, with an Assistant in a few of the larger stations. Medical officers in military employ also hold collateral civil charge at Almorā and Rānīkhet. There are eighty-three Assistant Surgeons in charge of the more important dispensaries, and a large number of Hospital Assistants. The important statistics of medical work are given in the table on pages 159 and 160. The number of hospitals and dispensaries

has risen from 212 in 1881 to 299 in 1891, 485 in 1901, and 500 in 1903. The increase between 1891 and 1901 was largely due to the inclusion in the returns of more than 100 police, railway, forest, and private dispensaries. The total income in 1903 was 9·4 lakhs, less than half of which came from Provincial revenues, while Local funds contributed 2·5 lakhs, and the income from fees, subscriptions, and endowments was 2·8 lakhs. Expenditure amounted to 8·6 lakhs. The number of beds available was 2,737 for male patients and 1,492 for females, of which 900 were in hospitals and dispensaries exclusively for females. The largest number of beds in any single hospital is 151 at Bareilly. The best-equipped hospitals for native patients are the Thomason Hospital at Agra and the Balrāmpur Hospital at Lucknow. The Ramsay Hospital for Europeans, opened at Nainī Tāl in 1892, cost more than 2½ lakhs, about half of which was provided from Government funds. The number of visits paid by lady doctors and female hospital assistants to women at their homes in the bazars in 1903 was about 3,800, and more than 300 of these were visits made to native ladies of the *parda-nashīn* class.

Lunatics.

There are four lunatic asylums—at Bareilly, Lucknow, Agra, and Benares—with 1,148 inmates in 1903, of whom 281 were criminal lunatics. Out of 327 cases in 1903, the principal causes of insanity were alleged to be *charas*- and *gānja*-smoking 51, spirit-drinking 13, fever 28, epilepsy 23, heredity 17, exposure and injury to brain 14, moral causes 46, and unknown 108.

Vaccination.

Inoculation by indigenous methods is not common, but is occasionally practised by the Māli or gardener caste, which is believed to have special influence over small-pox. The statistics of vaccination are shown on page 160. A dépôt for the supply of calf-lymph has been established near Nainī Tāl. Small-pox epidemics have decreased considerably with the spread of vaccination.

Sale of quinine.

The system of selling quinine in pice packets was first introduced in 1895. The packets are now prepared in the Alīgarh jail, and in 1903 the amount realized was Rs. 3,099, representing nearly 200,000 packets of 5-grain doses.

Village sanitation.

The (United Provinces) Village Sanitation Act of 1892 provides for inquiries being made into the sufficiency and purity of the water-supply in villages with a population of not less than 2,000. It was applied experimentally in eight Districts in 1894 and to the whole Provinces in 1896. Part of the funds required may be supplied by District boards, and grants

have also been made by Government; but owing to the prejudices of the people progress is slow. The Act also provides for necessary action being taken in villages in the case of epidemics, and for elementary conservancy.

Surveys. The Great Trigonometrical Survey of India, begun by Colonel Lambton in 1802, was extended over the North-Western Provinces[1] chiefly between 1843 and 1850, and forms the eventual basis on which all modern surveys are made. Before 1823 such other professional surveys as existed were merely of the nature of military reconnaissances. In 1823 the professional survey was begun. Its work consisted in the preparation of maps on the scale of 4 inches to the mile, based on theodolite traverses, and showing the boundaries and sites of villages and all topographical features. Practically the whole of the Provinces were surveyed in this manner, but the records of several Districts were lost during the Mutiny.

Up to 1871 cadastral surveys were carried out by the Settlement officers in Districts under settlement. The maps at first were mere eye sketches, showing roughly the position and shape of each field; but in 1852 the introduction of the plane-table resulted in a marked improvement. *Amīns* were the usual agency employed, but occasionally the work was done by the *patwāris* with considerable success.

The scale was 16 inches to the mile, or more usually some nearly equivalent scale of the local unit of measurement. These surveys not being based on scientific data, the areas were unreliable, and the compilation of maps of areas larger than a village was difficult and unsatisfactory. After 1871 the two systems of revenue survey were amalgamated, and cadastral surveys on the 16-inch scale, based on theodolite traverses, were carried out by professional survey parties. In the earlier surveys under this system, in addition to the maps, the survey parties were responsible for the entries in certain of the field-book columns, and in Districts surveyed later they were associated with the Settlement department in the preparation of other portions of the records-of-rights as well. The tracts professionally surveyed between 1871 and 1894 were the Districts of Agra, Muttra, Bāndā, Hamīrpur, and Morādābād, the permanently settled areas in Benares, Mirzāpur, Ghāzīpur, Jaunpur, and Balliā, and the Districts of Dehra Dūn, Gorakhpur, Bastī, Jhānsi (excluding Lalitpur), and Garhwāl. In 1894 survey by *amīns* was replaced by the system of survey by *patwāri* agency. Under this system, in Districts under survey,

[1] Now the Province of Agra.

after the professional traverse operations have been completed, each *patwāri* undergoes a course of instruction, and then under the supervision of a survey officer assisted by a small professional staff surveys the villages of his circle and prepares for each a complete preliminary record-of-rights, which is afterwards attested by a Settlement official before assessment. An officer of the Survey of India is in professional charge of the several survey establishments; the methods of survey and check survey are those of the Survey of India, and the Deputy-Surveyor-General is empowered to inspect the work. After settlement the *patwāris* who have been trained are, with the exception of a small minority who fail to qualify, competent to maintain the new maps and records under the supervision of the *kānungos*, a number of whom are also trained during the survey operations. The Districts where new maps and records have been prepared by *patwāri* agency since 1894 are Jhānsi (Lalitpur subdivision), Meerut, Bahraich, Kherī, Shāhjahānpur, Bareilly, Pīlībhīt, Gondā, Farrukhābād, Etah, and portions of Sītāpur, Bijnor, Nainī Tāl, Etāwah, and Alīgarh.

In addition to the surveys mentioned, the following areas have been surveyed topographically by the Survey of India: between 1840 and 1870, Sahāranpur, Muzaffarnagar, Meerut, Bulandshahr, Alīgarh, and some parts of Mirzāpur, on the 2-inch scale; between 1851 and 1853, the Native State of Tehrī on the ¼-inch scale; Dehra Dūn and the Siwāliks, partly on the 4-inch and partly on the 2-inch scales between 1873 and 1876; and Kumaun and Garhwāl on the 1-inch scale in 1886–8.

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TABLE I

Temperature in the United Provinces

Station.	Height of Observatory above sea-level.	Average temperature in degrees (Fahrenheit) for twenty-five years ending with 1901 in							
		January.		May.		July.		November.	
		Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.	Mean.	Diurnal range.
Gorakhpur	257	61·0	23·1	89·1	24·0	85·4	11·9	70·4	23·7
Allahābād	309	61·1	25·6	93·2	27·3	85·9	12·6	69·4	28·0
Agra	555	60·8	24·4	94·1	25·4	87·4	13·2	70·7	28·3
Lucknow	368	60·2	26·5	91·3	27·4	86·1	13·3	68·4	30·4
Roorkee	887	56·8	24·6	88·4	28·1	85·3	14·1	65·5	30·5
Rānīkhet (Hill station)	6,069	46·8	14·0	69·2	17·8	68·6	11·0	55·5	15·1

Note.—The diurnal range is the average difference between the maximum and minimum temperature of each day.

TABLE II

Rainfall in the United Provinces

Station.	Average rainfall (in inches) for twenty-five years ending with 1901 in												Total of year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Gorakhpur	1·02	0·51	0·33	0·43	1·42	8·25	13·25	12·61	8·23	4·04	0·13	0·21	50·43
Allahābād	1·05	0·53	0·30	0·13	0·27	5·79	11·39	11·79	5·26	2·42	0·24	0·30	39·47
Agra	0·54	0·30	0·26	0·16	0·56	2·63	9·73	7·77	4·51	0·51	0·08	0·43	27·48
Lucknow	1·11	0·52	0·31	0·08	0·95	5·18	10·94	11·17	5·67	1·14	0·10	0·44	37·61
Roorkee	1·82	1·47	0·71	0·40	0·85	4·86	12·34	12·89	5·77	0·44	0·26	0·75	42·56
Rānīkhet (Hill station)	2·90	2·22	1·94	1·27	2·24	6·11	13·51	13·92	6·67	1·46	0·31	0·97	53·52

TABLE III. DISTRIBUTION OF POPULATION, UNITED PROVINCES, 1901

District or State.	Area in square miles.	Number of towns.	Number of villages.	Total Population.			Urban Population.			Persons per square mile in rural areas.
				Persons.	Males.	Females.	Persons.	Males.	Females.	
Dehra Dūn	1,193	6	416	178,195	102,826	75,369	39,466	25,071	14,395	116
Sahāranpur	2,228	18	1,628	1,045,230	560,843	484,387	201,634	108,000	93,634	379
Muzaffarnagar	1,651	15	913	877,188	469,243	407,945	134,678	71,507	63,171	450
Meerut	2,362	27	1,494	1,540,175	820,563	719,612	274,975	149,054	125,921	536
Bulandshahr	1,908	23	1,509	1,138,101	599,108	538,993	184,683	96,641	88,042	500
Alīgarh	1,957	23	1,753	1,200,822	634,872	565,950	218,370	116,205	102,165	502
Total, Meerut Division	11,299	112	7,713	5,979,711	3,187,455	2,792,256	1,053,806	566,478	487,328	436
Muttra	1,457	14	837	763,099	409,030	354,069	142,655	76,257	66,398	426
Agra	1,856	8	1,197	1,060,528	568,822	491,706	235,306	124,656	110,650	445
Farrukhābād	1,719	8	1,689	925,812	500,897	424,915	125,899	64,615	61,284	465
Mainpurī	1,697	8	1,380	829,357	451,356	378,001	53,205	28,576	24,629	457
Etāwah	1,694	6	1,474	806,798	437,913	368,885	69,888	36,994	32,894	435
Etah	1,731	18	1,466	863,948	466,787	397,161	112,658	59,319	53,339	434
Total, Agra Division	10,154	62	8,043	5,249,542	2,834,805	2,414,737	739,611	390,417	349,194	444
Bareilly	1,591	12	1,924	1,090,117	585,304	504,813	182,763	96,364	86,399	570
Bijnor	1,875	16	2,132	779,951	406,697	373,254	169,725	84,085	85,640	325
Budaun	1,990	11	1,807	1,025,753	553,120	472,633	107,230	55,485	51,745	461
Morādābād	2,303	15	2,450	1,191,993	631,224	560,769	249,858	125,967	123,891	409
Shāhjahānpur	1,747	6	2,034	921,535	494,919	426,616	120,539	61,105	59,434	456
Pīlībhīt	1,373	5	1,056	470,339	249,615	220,724	54,820	28,064	26,756	303
Total, Rohilkhand Division	10,879	65	11,403	5,479,688	2,920,879	2,558,809	884,935	451,070	433,865	422

TABLE III. DISTRIBUTION OF POPULATION, UNITED PROVINCES, 1901 (*continued*)

District or State.	Area in square miles.	Number of towns.	Number of villages.	Total Population.			Urban Population.			Persons per square mile in rural areas.
				Persons.	Males.	Females.	Persons.	Males.	Females.	
Cawnpore	2,366	6	1,962	1,258,868	673,932	584,936	218,009	122,088	95,921	440
Fatehpur	1,631	5	1,403	686,391	349,381	337,010	36,704	18,765	17,939	398
Bāndā	3,061	5	1,188	631,058	315,599	313,459	40,652	20,213	20,439	193
Hamīrpur	2,289	7	756	458,542	230,204	228,338	48,375	23,935	24,440	179
Allahābād	2,833	13	3,473	1,489,358	744,654	744,704	217,346	113,997	103,349	449
Jhānsi	3,587	9	1,331	616,759	317,297	301,462	108,737	56,116	52,621	142
Jālaun	1,477	6	837	399,726	206,277	193,449	49,469	25,357	24,112	237
Total, Allahābād Division	17,244	51	10,950	5,540,702	2,837,344	2,703,358	719,292	380,471	338,821	222
Benares	1,009	4	1,972	882,084	445,047	437,037	225,086	116,809	108,277	651
Mirzāpur	5,223	7	4,257	1,082,430	530,075	552,355	110,555	54,644	55,911	186
Jaunpur	1,551	7	3,152	1,202,920	589,828	613,092	74,205	36,843	37,362	728
Ghāzīpur	1,391	7	2,489	913,818	444,735	469,083	69,007	33,342	35,665	607
Balliā	1,249	13	1,784	987,768	473,969	513,799	111,763	52,832	58,931	791
Total, Benares Division	10,423	38	13,654	5,069,020	2,483,654	2,585,366	590,616	294,470	296,146	430
Gorakhpur	4,596	18	7,544	2,957,074	1,470,469	1,486,605	162,244	81,001	81,243	608
Bastī	2,753	4	6,903	1,846,153	935,556	910,597	34,347	18,399	15,948	658
Azamgarh	2,147	12	4,688	1,529,785	757,314	772,471	91,627	45,749	45,878	670
Total, Gorakhpur Division	9,496	34	19,135	6,333,012	3,163,339	3,169,673	288,218	145,149	143,069	636
Nainī Tāl	2,658	7	1,513	311,237	172,970	138,267	39,066	23,427	15,639	102
Almorā	5,416	2	4,928	465,893	236,751	229,142	11,842	7,158	4,684	84
Garhwāl	5,629	3	3,600	429,900	211,588	218,312	7,063	5,136	1,927	75
Total, Kumaun Division	13,703	12	10,041	1,207,030	621,309	585,721	57,971	35,721	22,250	84
Total, Agra	83,198	374	80,939	34,858,705	18,048,785	16,809,920	4,334,449	2,263,776	2,070,673	367

TABLE III. Distribution of Population, United Provinces, 1901 (*continued*)

District or State.	Area in square miles.	Number of towns.	Number of villages.	Total Population. Persons.	Total Population. Males.	Total Population. Females.	Urban Population. Persons.	Urban Population. Males.	Urban Population. Females.	Persons per square mile in rural areas.
Lucknow	977	6	932	793,241	414,949	378,292	292,637	154,580	138,057	512
Unao	1,737	10	1,633	976,639	499,015	477,624	67,949	34,479	33,470	523
Rāe Barelī	1,752	4	1,736	1,033,761	510,090	523,671	39,373	19,714	19,659	567
Sītāpur	2,206	9	2,302	1,175,473	619,837	555,636	78,710	41,296	37,414	897
Hardoī	2,286	10	1,888	1,092,834	582,533	510,301	102,115	52,000	50,115	433
Kherī	2,963	5	1,659	905,138	478,629	426,509	33,578	17,870	15,708	294
Total, Lucknow Division	11,921	44	10,150	5,977,086	3,105,053	2,872,033	614,362	319,939	294,423	450
Fyzābād	1,707	9	2,661	1,225,374	619,403	605,971	125,100	65,382	59,718	644
Gondā	2,819	8	2,760	1,403,195	714,204	688,991	59,814	30,924	28,890	476
Bahraich	2,657	3	1,881	1,051,347	544,416	506,931	43,877	22,822	21,055	379
Sultānpur	1,701	1	2,458	1,083,904	534,932	548,972	9,550	5,216	4,334	632
Partābgarh	1,458	4	2,167	912,848	446,182	466,666	18,985	9,990	8,995	613
Bāra Bankī	1,703	10	2,052	1,179,323	603,967	575,356	67,436	34,265	33,171	653
Total, Fyzābād Division	12,045	35	13,979	6,855,991	3,463,104	3,392,887	324,762	168,599	156,163	542
Total, Oudh	23,966	79	24,129	12,833,077	6,568,157	6,264,920	939,124	488,538	450,586	496
Total, United Provinces	107,164	453	105,068	47,691,782	24,616,942	23,074,840	5,273,573	2,752,314	2,521,259	396
Rāmpur	899	6	1,120	533,212	280,987	252,225	103,880	53,039	50,841	477
Tehri-Garhwāl	4,180	...	2,456	268,885	133,427	135,458	...	...	...	64
Total, Native States	5,079	6	3,576	802,097	414,414	387,683	103,880	53,039	50,841	137
GRAND TOTAL. British Districts and Native States	112,243	459	108,644	48,493,879	25,031,356	23,462,523	5,377,453	2,805,353	2,572,100	384

NOTE.—The areas shown in this table are those for the year 1901. Later changes are referred to in District articles which give figures for 1904.

TABLE IV

STATISTICS OF AGRICULTURE, UNITED PROVINCES

(in square miles)

	Average for 1886–90.	Average for 1891-1900.	1900–1.	1903-4.
Total area	90,268	101,419	103,757	104,075
Total uncultivated area	39,379	49,343	49,725	49,150
Cultivable, but not cultivated	25,621	35,443	35,978	35,602
Uncultivable	13,758	13,900	13,747	13,548
Total cultivated area	50,889	52,076	54,032	54,925
Irrigated from canals	2,138	2,545	2,710	3,354
" " wells and tanks	8,349	10,305	10,126	12,872
" " other sources	2,692	1,458	728	975
Total irrigated area	13,179	14,308	13,564	17,201
Unirrigated area	37,710	37,768	40,468	37,724
Total Cropped Area.				
Rice	8,806	11,598	11,208	9,402
Wheat	8,074	8,561	9,939	12,170
Other food-grains and pulses	34,073	35,119	35,622	37,565
Oilseeds	1,282	1,352	1,244	2,107
Sugar-cane	1,474	1,949	1,895	1,702
Cotton	2,274	1,792	1,635	1,306
Other fibres	136	127	159	174
Poppy	389	490	615	689
Indigo	606	501	410	220
Tea	13	13	13	13
Tobacco	100	88	85	81
Miscellaneous	2,661	2,278	2,076	2,825
Total area cropped	59,889	63,868	64,901	68,241
Area double-cropped	10,766	12,189	11,649	13,316

NOTE.—The principal crops irrigated are wheat, sugar-cane, rice, and garden crops. The areas are taken from the village statistics.

TABLE V

Prices of Food-staples, United Provinces

(in seers per rupee)

Natural division.	Selected Food-staples.															Salt.		
	Wheat.			*Jowār.*			Gram.			Barley.			Rice.					
	Years.			Years.			Years.			Years.			Years.			Years.		
	1871–80.	1881–90.	1891–1900.	1871–80.	1881–90.	1891–1900.	1871–80.	1881–90.	1891–1900.	1871–80.	1881–90.	1891–1900.	1871–80.	1881–90.	1891–1900.	1871–80.	1881–90.	1891–1900.
Eastern .	17·33	16·84	13·55	23·59	24·06	18·76	22·44	23·37	19·04	24·08	23·81	18.97	15·59	14·78	12·13	7·74	10·05	9.89
Central .	19·07	18·59	15·25	24·52	23·97	20·85	23·41	24·83	20·65	25·83	25·02	21·24	14·57	13·18	11·26	9·2	11·31	10·99
Western .	20·45	17·78	15·69	23·55	22·61	21·77	24·60	23·61	22·27	28·12	25·27	23·44	13·17	11·98	10·42	9·79	12·05	11·44
Submontane, East .	18·09	17·65	14·19	18·61	26·90	13·52	22·32	23·75	18·19	26·58	26·40	19·83	16·78	16·87	15·68	7·27	9·95	10·02
Submontane, West .	20·44	18·40	15·53	24·17	22·95	19·46	23·47	22·59	20·31	30·07	27·07	23·39	14·60	13·61	11·29	9·12	11·40	10·71
Oudh .	20·54	19·00	15·40	28·75	27·35	21·78	25·21	24·61	21·25	29·96	27·69	22·56	16·73	15·68	13·56	8·76	10·48	10·54

NOTE.—The famine years of 1878, 1896, 1897, and 1899 are excluded.

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TABLE VI

Trade of the United Provinces with other Provinces

(in thousands of rupees)

Articles.	Imports.						
	1890–1.	1900–1.			1903–4.		
	By Rail (only).	By Rail.	By River.	Total.	By Rail.	By River.	Total.
Coal and coke	28,88,	68,81,	18,	68,99,	1,03,83,	17,	1,04,00,
Cotton, raw	21,51,	19,29,	17,	19,46,	36,25,	16,	36,41,
" twist and yarn	44,21,	57,75,	30,	58,05,	84,62,	4,96,	89,58,
" piece-goods	4,43,69,	4,17,74,	2,55,	4,20,29,	4,75,49,	64,80,	5,40,29,
Dyes and tans	22,69,	20,38,	76,	21,14,	20,89,	84,	21,73,
Grain and pulse, wheat	24,95,	4,71,	4,53,	9,24,	2,44,	85,	3,29,
" " " others	1,39,85,	1,02,82,	50,39,	1,53,21,	66,62,	12,93,	79,55,
Hides and skins	9,90,	50,00,	7,	50,07,	18,98,	10,	19,08,
Gunny-bags and cloth	16,93,	68,34,	81,	69,15,	68,78,	1,16,	69,94,
Lac	19,97,	56,56,	12,	56,68,	67,31,	2,	67,33,
Metals, brass (unwrought)	10,56,	14,17,	3,	14,20,	15,94,	6,	16,00,
" others	81,71,	1,33,48,	6,80,	1,40,28,	1,38,16,	3,13,	1,41,29,
Oils, kerosene	13,46,	23,92,	1,34,	25,26,	25,23,	1,43,	26,66,
" others	2,61,	4,47,	58,	5,05,	3,38,	23,	3,61,
Oilseeds	1,94,	6,05,	70,	6,75,	5,42,	30,	5,72,
Opium	56,	4,84,	...	4,84,	95,	...	95,
Provisions	30,02,	32,00,	5,31,	37,31,	56,55,	1,61,	58,16,

TABLE VI (*continued*)

TRADE OF THE UNITED PROVINCES WITH OTHER PROVINCES

(in thousands of rupees)

Articles.	Imports.						
	1890-1.	1900-1.			1903-4.		
	By Rail (only).	By Rail.	By River.	Total.	By Rail.	By River.	Total.
Railway plant and rolling-stock	54,42,	57,29,	9,	57,38,	88,70,	...	88,70,
Salt	1,27,51,	1,43,32,	1,47,	1,44,79,	1,37,73,	56,	1,38,29,
Spices	33,92,	37,15,	3,89,	41,04,	42,07,	2,41,	44,48,
Stone and lime	1,84,	5,51,	26,	5,77,	18,86,	16,	19,02,
Sugar, refined	14,52,	39,22,	34,	39,56,	65,28,	20,	65,48,
" unrefined	11,42,	41,33,	1,48,	42,81,	38,07,	3,52,	41,59,
Tea	75,	83,	...	83,	83,	...	83,
Tobacco, unmanufactured	11,32,	22,38,	1,01,	23,39,	22,41,	78,	23,19,
" manufactured	94,	1,83,	...	1,83,	2,24,	9,	2,33,
Wood	Not registered.	9 91,	4,65,	14,56,	13,64,	58,	14,22,
Wool, raw	2,53,	3,54,	1,	3,55,	1,68,	...	1,68,
" manufactured	38,35,	55,83,	3,16,	58,99,	41,53,	81,	42,34,
All other articles of merchandise	1,11,75,	1,45,40,	7,51,	1,52,91,	1,66,44,	5,66,	1,72,10,
Total	13,22,71,	16,48,87,	98,51,	17,47,38,	18,30,32,	1,07,52,	19,37,84,
Treasure:— Silver coin and bullion	Not registered.	3,04,08,	4,38,	3,08,46,	3,12,26,	33,	3,12,59,

TABLE VI (*continued*)

Trade of the United Provinces with other Provinces

(in thousands of rupees)

Articles.	Exports.						
	1890–1.	1900–1.			1903–4.		
	By Rail (only).	By Rail.	By River.	Total.	By Rail.	By River.	Total.
Coal and coke	19,70,	20,23,	2,	20,25,	40,27,	...	40,27,
Cotton, raw	1,88,21,	1,57,70,	14,	1,57,84,	1,71,83,	8,	1,71,91,
" goods	35,42,	64,56,	1,14,	65,70,	60,64,	1,15,	61,79,
Grain and pulse	99,57,	7,94,51,	10,28,	8,04,79,	5,20,14,	22,52,	5,42,66,
Hides and skins	69,15,	95,90,	1,73,	97,63,	74,44,	95,	75,39,
Indigo	53,76,	46,00,	...	46,00,	13,32,	...	13,32,
Jute	16,47,	13,16,	66,	13,82,	13,45,	32,	13,77,
Metals	29,00,	30,22,	4,14,	34,36,	33,22,	1,05,	34,27,
Oils	4,10,	8,54,	61,	9,15,	9,30,	2,50,	11,80,
Oilseeds	1,32,50,	3,46,87,	21,14,	3,68,01,	4,16,88,	30,29,	4,47,17,
Opium	2,35,72,	3,14,71,	...	3,14,71,	3,41,47,	...	3,41,47,
Provisions	1,17,65,	1,29,77,	12,66,	1,42,43,	70,47,	2,74,	73,21,
Saltpetre, &c.	14,42,	17,66,	9,39,	27,05,	17,57,	2,87,	20,44,
Spices	15,42,	27,52,	2,86,	30,38,	52,74,	1,20,	53,94,
Sugar	2,45,69,	2,51,17,	46,87,	2,98,04,	2,44,32,	42,12,	2,86,44,
Tea	7,14,	4,91,	...	4,91,	6,73,	...	6,73,
Tobacco	3,64,	8,87,	73,	9,60,	5,63,	50,	6,13,
Wool	8,83,	97,64,	81,	98,45,	29,98,	25,	30,23,
All other articles of merchandise	2,02,71,	2,95,18,	23,70,	3,18,88,	2,75,43,	13,50,	2,88,93,
Total	14,99,10,	27,25,12,	1,36,88,	28,62,00,	23,97,83,	1,22,04,	25,19,87,
Treasure :— Silver coin and bullion	Not registered.	86,63,	23,	86,86,	3,13,11,	56,	3,13,67,

TABLE VII

Statistics of Civil Justice, United Provinces

	Average for ten years ending 1890.	Average for ten years ending 1900.	1901.	1903.
Suits for money and movable property	124,817	117,228	101,975	102,233
Title and other suits . .	23,339	31,289	36,387	35,156
Rent suits	217,436	265,411	404,462	280,158
Total	365,592	413,928	542,824	417,547

Statistics of Criminal Justice, United Provinces

	Average for ten years ending 1890.	Average for ten years ending 1900.	1901.	1903.	Percentage of convictions, 1903.
Number of persons tried—					
(*a*) For offences against person and property . . .	142,603	133,747	111,067	106,158	31·4
(*b*) For other offences against the Indian Penal Code . .	26,845	23,377	21,542	21,338	53·4
(*c*) For offences against Criminal Procedure Code, Special and Local Laws . .	67,347	71,757	74,311	72,330	74·1
Total	236,795	228,881	206,920	199,826	49·2

TABLE VIII

PRINCIPAL SOURCES OF REVENUE, UNITED PROVINCES

(in thousands of rupees)

	Average for ten years ending March 31, 1890.		Average for ten years ending March 31, 1900.		Year ending March 31, 1901.		Year ending March 31, 1904.	
	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.	Total amount raised (Imperial, Provincial, and Local).	Amount credited to Provincial revenues.
Land revenue . . .	5,71,79,	1,06,95,	5,91,09,	1,39,54,	6,40,77,	1,72,06,	6,27,77,	2,27,17,
Stamps	61,79,	41,52,	71,85,	53,89,	82,77,	62,08,	80,47,	61,89,
Excise	51,00,	25,21,	53,87,	13,47,	69,00,	17,25,	83,24,	23,65,
Provincial rates . . .	72,84,	13,96,	95,57,	15,87,	1,03,91,	13,11,	1,05,56,	13,08,
Assessed taxes . . .	15,94,	7,24,	23,74,	11,77,	26,00,	12,67,	26,44,	10,06,
Forests	13,67,	5,83,	16,01,	8,00,	15,66,	7,83,	20,25,	11,40,
Registration . . .	4,31,	2,75,	4,26,	2,13,	4,99,	2,49,	4,47,	2,28,
Irrigation	55,51,	48,17,	77,01,	60,66,	98,98,	59,15,	98,54,	56,64,
Other sources . . .	60,01,	35,78,	1,82,40,	31,54,	2,64,26,	23,12,	2,91,68,	24,20,
Total	9,06,86,	2,87,41,	11,15,80,	3,36,87,	13,06,34,	3,69,76,	13,38,42,	4,30,37,
Contribution . . .	21,71,		1,79,		5,80,		2,10,	

TABLE IX

PRINCIPAL HEADS OF EXPENDITURE, UNITED PROVINCES

(in thousands of rupees)

	Average for ten years ending March 31, 1890.	Average for ten years ending March 31, 1900.	Year ending March 31, 1901.	Year ending March 31, 1904.
Opening balance . . .	60,84,	33,23,	40,39,	38,16,
(1) Charges in respect of collection (principally Land Revenue and Forests) . .	69,69,	50,61,	50,33,	54,99,
(2) Salaries and expenses of Civil Departments—				
(*a*) General Administration	12,71,	13,43,	13,90,	14,89,
(*b*) Law and Justice . .	52,65,	66,11,	70,33,	69,09,
(*c*) Police	37,47,	44,82,	51,67,	51,79,
(*d*) Education . . .	4,74,	5,98,	9,14,	10,23,
(*e*) Medical . . .	5,95,	7,80,	11,51,	9,70,
(*f*) Other heads . .	2,22,	2,00,	2,05,	2,88,
(3) Pensions and miscellaneous civil charges.	17,49,	27,42,	30,88,	33,43,
(4) Famine relief . . .	1,	27,	40,	*Nil.*
(5) Irrigation . . .	32,98,	56,99,	64,81,	67,22,
(6) Civil Public Works. .	29,30,	33,19,	37,13,	50,17,
(7) Other charges and adjustments	44,47,	31,30,	25,36,	30,99,
Total expenditure	3,09,68,	3,39,92,	3,67,51,	3,95,38,
Closing balance .	65,92,	31,97,	48,44,	75,25,

TABLE X

INCOME AND EXPENDITURE OF DISTRICT BOARDS, UNITED PROVINCES

	Average for three years ending 1900.	1900-1.	1903-4.
	Rs.	Rs.	Rs.
Income from—			
Land revenue	14,180	14,383	14,707
Provincial rates	32,42,587	33,07,267	32,41,544
Interest	18,268	17,203	18,756
Education	2,57,466	2,96,864	3,88,885
Medical	1,60,107	1,61,451	2,30,768
Scientific, &c.	6,151	9,350	24,283
Miscellaneous	11,66,816	7,82,793	12,49,711
Civil works	93,671	1,11,837	1,74,032
Pounds	3,21,484	3,45,018	4,03,772
Ferries	...	4,43,584	4,90,868
Total income	50,66,409	54,89,750	62,37,326
Expenditure on—			
General administration	74,882	90,755	1,02,356
Education	13,61,699	14,74,519	18,46,998
Medical	5,54,205	5,96,298	6,93,814
Scientific, &c.	25,462	36,543	63,985
Miscellaneous	6,27,262	6,77,198	3,75,591
Civil works	22,41,818	24,26,819	31,81,897
Total expenditure	48,85,328	53,02,132	62,64,641

NOTE.—Gross receipts and expenditure on account of pounds and ferries are shown from 1900 and 1901 respectively. The total income in the first column includes an average based upon net receipts.

TABLE XI

INCOME AND EXPENDITURE OF MUNICIPALITIES, UNITED PROVINCES

	1889-90.	Average for ten year : 1891-1900.	1900-1.	1903-4.
	Rs.	Rs.	Rs.	Rs.
Income from—				
Octroi	20,01,947	24,31,009	27,03,335	30,73,288
Tax on houses and lands	73,264	1,01,319	1,30,778	1,89,696
Other taxes	2,68,910	5,92,331	10,08,010	9,79,145
Rents	...	2,18,146	2,76,504	3,67,388
Loans	11,43,705	9,13,544	1,90,000	12,41,000
Other sources	7,19,603	8,22,539	8,41,633	13,34,042
Total income	42,07,429	50,78,888	51,50,260	71,84,559
Expenditure on—				
Administration and collection of taxes	3,93,630	4,76,512	6,42,343	7,12,035
Public safety	5,36,797	5,98,054	6,66,661	7,25,396
Water-supply and drainage :—				
(*a*) Capital	9,97,458	10,85,385	2,31,021	7,27,297
(*b*) Maintenance	68,658	3,06,235	4,55,408	4,89,811
Conservancy	4,81,714	8,56,586	10,75,387	12,61,023
Hospitals and dispensaries	85,586	1,13,811	1,72,764	1,64,518
Public works	5,23,143	5,14,257	5,07,621	7,09,365
Education	1,18,573	1,37,387	2,05,364	2,43,077
Other heads	8,38,431	9,33,326	9,07,679	7,82,271
Total expenditure	40,43,990	50,21,553	48,64,248	58,14,793

TABLE XII

Strength and Cost of Police, United Provinces

	1881.		1891.		1901.		1903.	
	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.	Number.	Total cost.
Supervising Staff.		Rs.		Rs.		Rs.		Rs.
District and Assistant District Superintendents	55	...	60	...	88	...	88	...
Inspectors	192	...	208	...	188	...	193	...
Subordinate Staff.								
Sub-inspectors } Head constables }	4,018	...	721	...	2,024	...	2,021	...
			3,644	...	2,785	...	2,798	...
Constables	17,935	...	19,114	...	19,988	...	20,033	...
Total Regular Police	22,200	35,43,311	23,747	38,71,951	25,073	53,97,449	25,133	53,95,743
Municipal Police	10,926	8,03,308	9,471	6,86,930	9,742	7,21,428	9,797	7,55,616
Rural Police	91,719	29,97,263	90,566	29,31,446	88,069	30,88,378	87,993	31,43,642

TABLE XIII

STATISTICS OF JAILS, UNITED PROVINCES

	1881.	1891.	1901.	1903.
Number of Central jails	7	6	6	6
Number of District jails	45	44	44	44
Number of Subsidiary jails	29	20	*5	6
Average daily jail population—				
Male prisoners: In Central jails	10,918	11,525	11,787	9,203
Male prisoners: In other jails	15,535	15,459	16,499	13,304
Female prisoners: In Central jails	624	431	428	200
Female prisoners: In other jails	992	820	600	440
Total prisoners	28,069	28,235	29,314	23,147
Rate of mortality per 1,000	24·1	27·6	24·2	15·5
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Expenditure on jail maintenance	9,77,146 0 0	11,56,654 0 0	14,42,837 0 0	11,89,130 0 0
Cost per prisoner	35 15 8	41 14 0	49 4 0	51 6 0
Profits on jail manufactures	1,88,743 0 0	1,70,211 0 0	1,94,957 0 0	2,03,443 0 0
Earnings per prisoner	5 15 8	6 8 0	7 1 0	9 8 0

* Fifth-class (subsidiary) jails only. The record of statistics relating to lock-ups and of under-trial prisoners confined therein was discontinued from 1896.

TABLE XIV

Educational Statistics, United Provinces

Institutions.	1890–1.			1900–1.			1903–4.		
	Number of institutions.	Scholars.		Number of institutions.	Scholars.		Number of institutions.	Scholars.	
		Males.	Females.		Males.	Females.		Males.	Females.
Public.									
Arts colleges	16	1,732	2	28	1,670	27	28	1,899	45
Professional colleges	7	723	...	10	728	...	10	875	...
Secondary schools { Upper (High)	87	15,945	885	120	17,575	1,686	125	18,854	1,916
Secondary schools { Lower (Middle)	421	35,554	870	426	49,228	1,781	423	53,034	1,374
Primary schools	4,758	149,262	9,646	6,982	262,659	13,737	8,601	328,828	18,350
Training schools	7	356	7	6	445	103	8	475	66
Other special schools	56	3,141	144	48	2,840	99	58	3,091	57
Private.									
Advanced	1,579	17,925	...	1,228	18,069	119	897	12,890	67
Elementary	4,786	51,013	2,316	5,072	58,971	3,762	4,559	56,888	4,173
Total	11,717	275,651	13,870	13,920	412,185	21,314	14,709	476,834	26,048

TABLE XV

STATISTICS OF HOSPITALS, LUNATIC ASYLUMS, AND VACCINATION, UNITED PROVINCES

	1881.	1891.	1901.	1903.
Hospitals.				
Number of civil hospitals and dispensaries	212	299	485	500
Average daily number of—				
(*a*) In-patients	1,689	2,253	2,416	2,353
(*b*) Out-patients	11,627	18,394	24,321	24,547
Income from—				
(*a*) Government payments	Rs. 1,97,447	Rs. 2,60,713	Rs. 3,28,673	Rs. 4,06,302
(*b*) Local and municipal payments	„ 78,534	„ 1,37,660	„ 1,96,956	„ 2,54,604
(*c*) Fees, endowments, and other sources	„ 1,11,755	„ 1,45,694	„ 2,20,292	„ 2,81,969
Expenditure on—				
(*a*) Establishments	„ 2,32,467	„ 3,01,306	„ 3,92,034	„ 4,17,175
(*b*) Medicine, diet, building, &c.	„ 1,28,052	„ 2,37,990	„ 3,15,195	„ 4,47,983
Lunatic Asylums.				
Number of asylums	4	4	4	4
Average daily number of lunatics—	853	1,107	1,091	1,148
(*a*) Criminal	147	152	262	281
(*b*) Non-criminal	706	855	729	867

NOTE.—For 1901 and 1903 the income and expenditure are for Government and aided hospitals only.

TABLE XV (*continued*)

Statistics of Hospitals, Lunatic Asylums, and Vaccination, United Provinces

	1881.	1891.	1901.	1903.
Lunatic Asylums (continued).				
Income from—				
(*a*) Government payments	Rs. 52,281	Rs. 65,271	Rs. 91,132	Rs. 96,228
(*b*) Fees and other sources	,, 3,508	,, 4,627	,, 2,817	,, 42,900
Expenditure on—				
(*a*) Establishment	,, 29,000	,, 28,692	,, 33,117	,, 39,974
(*b*) Diet, buildings, &c.	,, 28,827	,, 52,087	86,152	,, 85,796
Vaccination.				
Population among whom vaccination was carried on .	44,350,343	47,146,033	47,960,667	47,960,667
Number of successful operations	644,952	859,358	1,466,776	1,591,053
Ratio per 1,000 of population	14·54	18·23	30·58	33·17
Total expenditure on vaccination	Rs. 1,29,319	Rs. 1,34,361	Rs. 1,37,471	Rs. 1,36,196
Cost per successful case	a. p. 3 3	a. p. 2 6	a. p. 1 6	a. p. 1 4

RIVERS, MOUNTAINS, LAKES, CANALS, AND HISTORIC AREAS

Ganges (*Gangā*).—The great river of Northern India which carries off the drainage of the Southern Himālayas, and also a smaller volume received from the northern and eastern slopes of the Vindhyas. It rises in the Tehrī State, in 30° 55′ N. and 79° 7′ E., where it issues under the name of Bhāgīrathi from an ice cave at the foot of a Himālayan snow-bed near Gangotrī, 13,800 feet above the level of the sea. During its earlier course it receives the Jāhnavī from the north-west, and subsequently the Alaknandā, after which the united stream is called Ganges. It pierces the Himālayas at Sukhī, and turns south-west to Hardwār. From this point it flows south and south-east between the Meerut and Rohilkhand Divisions of the United Provinces, and then separates the latter from the Agra Division, and flows through the eastern part of Farrukhābād District. It next forms the south-western boundary of Oudh, and then crosses the Districts of Allahābād, Mirzāpur, Benares, and Ghāzīpur, after which it divides the Districts of Ghāzīpur and Balliā from Bengal. The Ganges is a considerable river even at Hardwār, where the UPPER GANGES CANAL starts, and it is tapped again at Naraura for the LOWER GANGES CANAL. It thus supplies the largest irrigation works in the United Provinces, and is also the source of the water-supply of the cities of Meerut (by a canal), Cawnpore, and Benares. Its chief tributaries are: the RĀMGANGĀ (Farrukhābād), JUMNA and TONS (Allahābād), GUMTĪ (Ghāzīpur), and GOGRA (Balliā), while smaller affluents are the Mālin (Bijnor), Būrhgangā (Meerut), Mahāwa (Budaun), Sot or Yār-i-Wafādār (Shāhjahānpur), Būrhgangā and Kālī Nadī (Farrukhābād), Isan (Cawnpore), Pāndū (Fatehpur), Jirgo (Mirzāpur), Barnā (Benares), Gāngī and Besū (Ghāzīpur), and Chhotī Sarjū (Balliā), which is called the Tons in its upper portion. The principal towns on or near its banks in the United Provinces are: Srīnagar (on the Alaknandā), Hardwār, Garhmuktesar, Anūpshahr, Soron, Farrukhābād (now left some miles away), Kanauj, Bilhaur, Bithūr, Cawnpore, Dalmau, Mānikpur, Karā, Allahābād, Sirsā, Mirzāpur, Chunār, Benares, Ghāzīpur, and Balliā.

In the United Provinces.

In Bengal. Impinging on the Shāhābād District of Bengal, in 25° 31′ N. and 83° 52′ E., the Ganges forms the boundary of this District, separating it from the United Provinces, till it receives as a tributary the GOGRA on the north bank. It shortly afterwards receives another important tributary, the SON, from the south, then passes Patna, and obtains another accession to its volume from the GANDAK, which rises in Nepāl. Farther to the east, it receives the Kosī, and then, skirting the Rājmahāl Hills, turns sharply to the south, passing near the site of the ruined city of Gaur. About 20 miles farther on, the Ganges begins to branch out over the level country; and this spot marks the commencement of its delta, being 220 miles in a straight line, or nearly 300 by the windings of the river, from the Bay of Bengal. The present main channel, assuming the name of the PADMĀ, proceeds in a south-easterly direction past Pābna to Goalundo, where it is joined by the Jamunā, the main stream of the BRAHMAPUTRA. The bed is here several miles wide, and the river is split up into several channels, flowing between constantly shifting sandbanks and islands. During the rains the current is very strong, and even steamers find difficulty in making headway against it. This vast confluence of water rushes towards the sea, joining the great MEGHNĀ estuary in 23° 13′ N. and 90° 33′ E., after the Ganges has had a course of 540 miles in Bengal, and 1,557 miles from its source.

The Delta. The Meghnā estuary, however, is only the largest and most easterly of a great number of Ganges mouths, among which may be mentioned the HOOGHLY, Mātla, Raimangal, Mālanchā, and HARINGHĀTA. The most westerly and the most important for navigation is the Hooghly, on which stands Calcutta. This receives the water of the three westernmost distributary channels that start from the parent Ganges in Murshidābād District (generally known as the NADIĀ RIVERS, one of which takes again the name of the Bhāgīrathi), and it is to this exit that the sanctity of the river clings. Between the Hooghly on the west and the Meghnā on the east lies the Ganges delta. The upper angle of this consists of the Districts of Murshidābād, Nadiā, Jessore, and the Twenty-four Parganas. These Districts have for the most part been raised above the level of periodical inundation by the silt deposits of the Ganges and its offshoots; and deltaic conditions now exist only in the eastern Districts of Khulnā, Farīdpur, and Backergunge, and towards the southern base of the delta, where the country sinks into a series of great swamps, intersected by

a network of innumerable channels, and known as the SUNDARBANS.

In its course through Bengal, the Ganges rolls majestically down to the sea in a bountiful stream, which never becomes a merely destructive torrent in the rains and never dwindles away in the hottest summer. Embankments are seldom required to restrain its inundations, for the alluvial silt which it spills over its banks, year by year, affords to the fields a top-dressing of inexhaustible fertility. If one crop be drowned by the flood, the cultivator calculates that his second crop will abundantly requite him. In Eastern Bengal, in fact, the periodic inundations of the Ganges and its distributaries render the country immune from the results of a scanty rainfall and make artificial irrigation unnecessary.

Until some 400 years ago the course of the Ganges, after entering Bengal proper, was by the channel of the Bhāgīrathi and Hooghly as far as the modern Calcutta, whence it branched south-eastwards to the sea, down what is still known as the Adi Gangā, which corresponds for part of its course with TOLLY'S NULLAH. By degrees this channel silted up and became unequal to its task, and the main stream of the Ganges was thus obliged to seek another outlet. In this way the ICHĀMATĪ, the JALANGĪ, and the MĀTĀBHĀNGA became in turn the main stream. The river tended ever to the east; and at last, aided perhaps by one of the periodic subsidences of the unstable surface of the country, it broke eastwards right across the old drainage channels, until it was met and stopped by the Brahmaputra. Great changes still take place from time to time in the river-bed, and alter the face of the country. Extensive islands are thrown up and attach themselves to the bank; while the river deserts its old bed and seeks a new channel, it may be, many miles off. Such changes are so rapid and on so vast a scale, and the eroding power of the current upon the bank is so irresistible, that it is considered perilous to build any structure of a large or permanent character on the margin.

Sacred places.

The junction of two or more rivers, called Prayāg, is usually considered sacred; but that of the Ganges and Jumna at Allahābād, where according to popular belief a third river, the SARASWATĪ, which sinks into the sands at Bhatner in Rājputāna, reappears from its subterranean course, is one of the most holy places in India. Here, on the spit of land below the fort, a large bathing festival is held annually in the month of Māgh (January). Every twelve years the fair is called the *kumbh melā*, as it is held when Jupiter is in Aquarius (*kumbh*) and

the sun in Aries, and the efficacy of bathing is increased, large numbers of pilgrims from every part of India flocking to the junction. At the *kumbh melā* in 1894 the attendance was estimated at a million to a million and a half.

The holiest places upon the banks of the Ganges in Bengal are Sonpur at its confluence with the Gandak, and Sāgar Island at the mouth of the Hooghly. Both places are the scene of annual bathing festivals, which are frequented by thousands of pilgrims from all parts of India. Even at the present day, the six years' pilgrimage from the source of the Ganges to its mouth, and back again, known as *pradakshina*, is performed by many; and a few fanatical devotees may be seen wearily accomplishing this meritorious penance by measuring their length.

Most rivers in India have sanctity attached to them, but the Ganges is especially sacred. Its importance in Vedic literature is slight, but in the epics and Purānas it receives much attention. Sāgar, the thirty-eighth king of the Solar Dynasty, had performed the great horse-sacrifice (*Asvamedha*) ninety-nine times. In this ceremony the horse wandered over the world, unhaltered and never guided or driven. Every country it entered was conquered by the following army, and on its return it was sacrificed to the gods. When Sāgar drove out a horse for the hundredth time, the god Indra stole it and tied it up in Pātāl (the under-world) near the place where a sage, Kapila Muni, was meditating. Sāgar had two wives, one of whom bore Asmanjas, and the other had sixty thousand sons who were following the horse. The sons found it, and believing Kapila to be the thief abused him, and were consumed to ashes in consequence of the sage's curse. Ansmān, son of Asmanjas, had gone in search of his uncles, and finding the horse took it home. Garuda, the mythical half-man, half-bird, king of the snakes, told him that the sin of those who had abused Kapila could best be removed by bringing to earth the Ganges, which then flowed in heaven (Brahmā Lok). In spite of much prayer and the practice of austerities by Ansmān and his son, Dalīp, this could not be brought about; but Bhāgīrath, son of Dalīp, persuaded Brahmā to grant him a boon, and he chose the long-sought permission to allow the Ganges to flow on this world. Brahmā agreed, but told Bhāgīrath that the earth could not sustain the shock, and advised him to consult Siva, who consented to break the force of the river by allowing it to fall on his head. The ice-cavern beneath the glacier, from which the stream descends, is repre-

sented as the tangled hair of Siva. One branch, the Mandākinī, still flows through Brahmā Lok; a second, which passes through Pātāl, washed away the sin of the sixty thousand; and the third branch is the Ganges[1]. Besides the places which have already been referred to, Gangotrī, near the source, Devaprayāg, Garhmuktesar, Soron, Dalmau, and Benares are the principal bathing resorts. The sanctity of the river still exists everywhere, though according to prophecy it should have passed away to the Narbadā a few years ago. Dying persons are taken to expire on its banks, corpses are carried to be burned there, and the ashes of the dead are brought from long distances to be thrown into its holy stream, in the hope of attaining eternal bliss for the deceased. About the time of the regular festivals the roads to the river are crowded with pilgrims, who keep up an incessant cry of salutation to the great goddess (*Gangā jī kī jai*). On their return they carry away bottles of the sacred water to their less fortunate relations.

Traffic. Till within the last forty years of the nineteenth century, after which the extension of railways provided a quicker means of transport, the magnificent stream of the Ganges formed almost the sole channel of traffic between Upper India and the seaboard, and high masonry landing-places for steamers still exist at Allahābād and other places lower down, though they are no longer used. The products of the Gangetic plain, and the cotton of the Central Provinces and Central India, used formerly to be conveyed by this route to Calcutta. At present it is chiefly used for the carriage of wood and grain in many parts of its course, and also of oilseeds, saltpetre, stone, and sugar in the eastern portion of the United Provinces. The principal import to these Provinces is rice, but manufactured goods and metals are also carried in considerable quantities. The canal dam at Naraura in Bulandshahr District has stopped through traffic between the upper and lower courses of the Ganges.

In Bengal, however, the Ganges may yet rank as one of the most-frequented waterways in the world. The downward traffic is most brisk in the rainy season, when the river comes down in flood. During the rest of the year the boats make their way back up stream, often without cargoes, either helped by a favourable wind or laboriously towed along the bank. The most important traffic in Bengal is in food-grains and oilseeds; and, though no complete statistics are available, it appears probable that the actual amount of traffic on the Ganges by

[1] A variant of the legend represents the ashes of the sixty thousand as having been purified by the BHĀGĪRATHI, a branch of the Ganges.

native craft has not at all diminished since the opening of the railway, to which the river is not only a rival, but a feeder. Railway stations situated on the banks form centres of collection and distribution for the surrounding country, and fishing villages like Goalundo have by this means been raised into river marts of the first magnitude. Steamer services ply along its whole course within Bengal, and many towns lie on its banks, the most important being PATNA and MONGHYR.

Six railway bridges cross the Ganges: near Roorkee, at Garhmuktesar (2,332 feet), Rājghāt, Cawnpore (2,900 feet), and Benares (3,518 feet), while the sixth, measuring 3,000 feet, was completed near Allahābād in 1905. There is no bridge below Benares, though the construction of a railway bridge near Sāraghāt in Bengal is contemplated. The normal flood discharge varies from 207,000 cubic feet per second at Hardwār, where the bed is steep and only 2,500 feet wide, to 300,000 at Garhmuktesar and 150,000 at Naraura (width at canal weir and about a mile above it 3,880 feet). The bridge at Allahābād is designed to allow the discharge of a million cubic feet per second. The normal flood-level falls from 942 feet above the sea at Hardwār to 287 at Allahābād.

Solāni.—A river of the United Provinces, which rises in the Siwālik Hills (30° 13′ N., 77° 59′ E.) from the highest point of the Mohan pass, flows south and south-east through Sahāranpur District, and then winds through a corner of Muzaffarnagar, joining the GANGES after a course of about 55 miles. The upper part of the river and most of its tributaries are mere water-courses, almost dry except during the rains, when they carry off the drainage of the Siwāliks in rushing torrents. Near Roorkee a magnificent aqueduct of brick, with fifteen arches, each 50 feet wide, conveys the water of the UPPER GANGES CANAL at a height of 24 feet above the bed of this river. The Solāni has done much damage by floods and changes in its course. In Muzaffarnagar this was intensified by percolation from the Ganges Canal, but drainage cuts have improved the tract.

Rāmgangā, West (also known as Ruhut or Ruput in its upper courses).—A river of the United Provinces, which rises in Garhwāl District (30° 5′ N., 79° 12′ E.) in the hills some distance south of the snowy range of the Himālayas. It flows for about ninety miles with a very rapid fall, first through Garhwāl, then through Kumaun, and after again entering Garhwāl debouches on the plains near the Kālāgarh fort, south of the peak of the same name, in Bijnor District. It is now a large

river, and 15 miles lower down receives on its right bank the Khoh, which also rises in Garhwāl. Both these streams are liable to sudden floods owing to heavy rain in their upper courses. Their beds abound in quicksands, and their channels are shifting. The Rāmgangā passes south-east, through Morādābād District and the Rāmpur State, into Bareilly, after which it flows south between Budaun and Shāhjahānpur, and then, crossing the last-mentioned District, flows through the eastern *tahsīl* of Farrukhābād and part of Hardoī, falling into the GANGES a little above Kanauj, after a total course of about 370 miles. Throughout its course in the plains it receives many small streams from the Tarai, and a few larger tributaries whose sources are in the Himālayas. The Kosī in Morādābād, the Dojorā, formed by the Kichhā or West Bahgul, Dhakrā, and Bhakrā rivers in Bareilly, and the Deohā or Garrā in Shāhjahānpur are the most important of these. During its whole course in the plains the Rāmgangā flows in a shifting and uncertain bed. It changed its channel in the middle of the nineteenth century, so as to run into the Dojorā and pass Bareilly city; in the rains of 1871 it returned to its former course ten miles distant, but has once more begun to approach the city. During floods it spreads out widely on either side, and carves out new channels for itself, often destroying the fertility of the land with a layer of sand. It is little used for irrigation.

Kālī Nadī, East (properly Kālindī, corrupted into Kālī Nadī or 'black river' by Persian writers).—A river of the United Provinces, flowing through the Districts of Muzaffarnagar, Meerut, Bulandshahr, Alīgarh, Etah, and Farrukhābād. It rises under the name of Nāgan in Muzaffarnagar (29° 19′ N., 77° 48′ E.), but in this District as well as in Meerut its bed is ill-defined and often dry. In Bulandshahr it becomes a perennial stream, running through a valley marked by high banks, and takes the name of Kālī Nadī. Its course then changes from south to south-east till it joins the GANGES not far above Kanauj, 310 miles from its source. The valley of the river in Bulandshahr, and in Etah, Mainpurī, and Farrukhābād, has suffered from the inability of the channel to carry off excessive rainfall, the effects in Bulandshahr being augmented by the use of the river as a canal escape. Of late years, however, the Irrigation department has carried out a number of works to improve the flow, and deterioration has stopped. In 1885 a flood swept away the Nadrai aqueduct in Etah, which carries the Lower Ganges Canal over this river, and a series

of wet seasons caused the land in the valley to deteriorate so much that large reductions of assessment were made. This tract has now recovered to a large extent.

Gumtī (*Gomatī*; possibly the *Sambos* of Arrian).—A river of the United Provinces, which rises (28° 35′ N., 80° 7′ E.) nearly 20 miles east of Pīlībhīt. For about twelve miles the river-bed is a mere depression, which dries up in the hot season. A small stream, the Gaihai, then joins it, and a shallow channel is formed, while after it has received the Joknai (thirty-five miles from its source) it runs in a perennial stream. A few miles farther down the Pawāyān steam tramway crosses by a bridge 250 feet long, and the Shāhjahānpur-Kherī road by a bridge 210 feet long. The Gumtī then flows sluggishly through Shāhjahānpur and Kherī, with a winding course and a network of channels, choked with weeds and aquatic plants. Below Muhamdī it changes its character, and has a well-defined channel 100 to 200 feet wide, with banks increasing in height to 60 feet at Lucknow, 180 miles from its source. Two considerable affluents, the Kathnā (90 miles long) and Sarāyān (120 miles), join the Gumtī in Sītāpur. At Lucknow it is crossed by two railway bridges, and one stone, one brick, and two iron road-bridges. From Lucknow its course winds much through Bāra Bankī, Sultānpur, and Jaunpur Districts, the distance by river from Lucknow to Jaunpur being almost double the distance in a direct line. The breadth of the river increases from 120 to 200 feet in Lucknow and Bāra Bankī to 200 to 400 in Sultānpur, and 400 to 600 in Jaunpur. At Jaunpur it is crossed by a magnificent stone bridge, 654 feet long, built at the end of the sixteenth century, and also by a railway bridge. The Sai, a large river which runs parallel to the Gumtī for over 350 miles, joins it below Jaunpur. From this point the river flows through the Districts of Jaunpur and Benares and joins the Ganges at Saidpur in Ghāzīpur District, after a total course of nearly 500 miles.

The Gumtī with its tributaries drains about 7,500 square miles, and is especially liable to severe floods, causing much damage. A careful survey of the river was made after the flood of 1894. It then appeared that the floods are entirely due to excessive rainfall in the catchment area, and not to spill from other rivers. At Lucknow the fall is only nine inches per mile, and at Jaunpur only six inches, so that flood-water cannot be carried off fast enough. After heavy rain in September, 1894, the river rose at Lucknow to a height of 22 feet above the ordinary low-water level. There is a tradition that in 1774

the Gumtī rose so high at Jaunpur that boats sailed over the bridge, the parapet of which is 27 feet above low-water level. In 1871 the water rose there to a height of 9 feet above the parapet; 4,000 houses were destroyed in the city, and nearly 9,000 in the villages of the District. In September, 1894, the river again rose 27 feet above low-water level, and 1,378 houses in the city were partly or completely destroyed. The Gumtī is navigable as high as Muhamdī, but traffic is not very considerable. Grain, fuel, and thatching-grass are carried down stream, and stone is taken up. It is not used for irrigation.

Sai.—A river of the United Provinces, rising in Hardoī District between the Gumtī and Ganges (27° 46′ N., 80° 9′ E.). It flows in a tortuous south-easterly direction through the Oudh Districts of Unao, Rāe Barelī, and Partābgarh, and enters the Province of Agra in Jaunpur District, falling into the GUMTĪ ten miles below Jaunpur city after a course of over 350 miles. In the rains small boats can pass up as high as Rāe Barelī. The drainage falling into the Sai is chiefly from the north, and its bed is usually too deep to afford irrigation.

Tons, Southern (*Tamasā*).—A river of Central India, rising in the Kaimur range in Maihar State (24° N., 80° 9′ E.). Its nominal source is the Tamasā Kund, a tank on the Kaimur Hills, 2,000 feet above sea-level. From this point the river follows a general north-easterly course for about 120 miles, and, after traversing the rough hilly country round Maihar, flows through the level fertile country of Rewah. Here it is joined by the Satnā; and 40 miles lower down it reaches the edge of the plateau at Purwā, where, with its affluents the Bīhar and Chachaiā, it forms a magnificent series of waterfalls. The greatest fall is that of the Bīhar, which dashes over the precipice in a great sheet of water, 600 feet broad and 370 high. The fall of the Tons itself has a descent of about 200 feet. The Tons then flows through a level plain, spreading into a wide stream with long deep reaches, and enters the United Provinces at Deora in Allahābād District. After a north-easterly course of about 44 miles, it falls into the Ganges 19 miles below the junction of the latter with the Jumna, its total length being 165 miles. The principal tributary is the Belan, which rises in Mirzāpur and drains the central plateau of that District. After a picturesque westerly course of 95 miles, including a waterfall 100 feet in height, the Belan enters Allahābād and traverses that District and Rewah State for 40 miles, joining the Tons where it crosses the border between Rewah and Allahābād. A bridge, 1,206 feet long with seven spans, carries the East Indian

Railway over the Tons near its junction with the Ganges. Navigation by boats of any size is confined to the lower reaches; floods rise as high as 25 feet in a few hours, and the highest recorded rise has been 65 feet.

Bānganga.—An old bed of the Ganges in Benares and Ghāzīpur Districts, United Provinces.

Tons, Eastern (also called Chhotī Sarjū).—A river draining the east of the United Provinces between the GOGRA and GUMTĪ. It rises in the west of Fyzābād, and runs nearly parallel with the Gogra. After entering Azamgarh it flows with a tortuous course south-east past Azamgarh town, and receives the Chhotī Sarjū, a branch from the Gogra, near Mau. The combined stream, now known as the Chhotī Sarjū, flows still south-east into Balliā, joining the GANGES two miles west of Balliā town. The Tons is remarkable for its disastrous floods, caused by the inability of the channel to carry off excessive rainfall. In 1871, 1894, and 1903, AZAMGARH TOWN was damaged in this way.

[*Report on the River Tons Floods in October*, 1894, by A. B. Gale.]

Karamnāsā (*Karamnāshā*, 'the destroyer of religious merit;' the *Kommenases* of Arrian).—A river of Northern India, rising near Sārodāg in the Kaimur Hills (24° 32′ N., 83° 26′ E.), 18 miles west of Rohtāsgarh in Bengal. It first flows north-west, and near Darihārā begins to form the boundary between the Districts of Shāhābād (Bengal) and Mirzāpur (United Provinces). It then flows north for about 15 miles across Mirzāpur, after which it turns north-east and separates Shāhābād from Benares and Ghāzīpur, until it falls into the GANGES near Chausā, after a total course of about 146 miles. Its tributaries are the Durgautī and Dharmautī, two small streams on the right bank. In the hills, the bed of the Karamnāsā is rocky and its banks abrupt; but as it debouches upon the plains, it sinks deeply into a rich clay, very retentive of moisture. During the rains small boats can ply as high as its confluence with the Durgautī. There are two falls, called Deo Dharī and Chhanpathar, which attract attention from their height and beauty.

Two legends account for the ill repute of the river. One tells how Rājā Trisanka of the Solar race had killed a Brāhman and contracted an incestuous marriage. He was purged from these sins by a saint who collected water from all the sacred streams of the world and washed him. The bath took place at the spot where the river issues, and this bears for ever the

taint of his guilt. The other legend makes Trisanka attempt to ascend into heaven by means of long austerities. Half-way he was suspended head downwards by the gods, and a poisonous moisture exudes from his mouth into the river. The real cause of its ill fame is probably the fact that the Karamnāsā was the boundary of the eastern kingdom of Magadha, which is treated with contempt in Sanskrit literature because its inhabitants were not Aryans. Hindus living on its banks, except those of the highest castes, are not defiled by it, and carry more scrupulous travellers over it for a consideration. There is no regular irrigation from the Karamnāsā.

Son (Sanskrit, *Suvarna* or 'gold'; likewise called *Hiranya-Vāha* or *Hiranya-Vāhu*; the *Sonos* of Arrian; also identified with the *Erannoboas* of Arrian).—A large river of Northern India, which, flowing from the Amarkantak highlands (22° 42′ N., 82° 4′ E.), first north and then east, joins the GANGES 10 miles above Dinapore, after a course of about 487 miles.

The Son rises near the Narbadā at Amarkantak in the Maikala range, the hill on which its nominal source is located being called Sonbhadra or more commonly Sonmundā. It possesses great sanctity, the performance of *sandhyā* on its banks ensuring absolution and the attainment of heaven even to the slayer of a Brāhman. Legends about the stream are numerous, one of the most picturesque assigning the origin of the Son and Narbadā to two tears dropped by Brahmā, one on either side of the Amarkantak range. The Son is frequently mentioned in Hindu literature—in the Rāmāyanas of Vālmīki and Tulsī Dās, the Bhagwat, and other works.

Soon after leaving its source, the Son falls in a cascade over the edge of the Amarkantak plateau amid the most picturesque surroundings, and flows through Bilāspur District of the Central Provinces till it enters the Rewah State at 23° 6′ N. and 81° 59′ E. From this point till it leaves the Central India Agency after a course of 288 miles, the stream flows through a maze of valley and hill, for the most part in a narrow rocky channel, but expanding in favourable spots into magnificent deep broad reaches locally called *dahār*, the favourite resorts of the fisher caste. Following at first a northerly course, near its junction with the Mahānadī river at Sarsi it meets the scarp of the KAIMUR HILLS and is turned into a north-easterly direction, finally leaving the Agency 5 miles east of Deorā village. In Central India three affluents of importance are received: one on the left bank, the Johillā, which likewise rises at Amarkantak and joins it at Barwālū village; and two

which join it on the right bank, the Banās at 23° 17′ N. and 81° 31′ E., and the Gopat near Bardī. In the United Provinces the Son flows for about 55 miles from west to east across Mirzāpur District, in a deep valley never more than 8 or 9 miles broad, often narrowing to a gorge, and receives from the south two tributaries, the Rihand and Kanhar. During the dry season it is shallow but rapid, varying in breadth from 60 to 100 yards, and is easily fordable. The Son enters Bengal in 24° 31′ N. and 83° 24′ E., and flows in a north-westerly direction, separating the District of Shāhābād from Palāmau, Gayā, and Patna, till, after a course within Bengal of 144 miles, it falls into the Ganges in 25° 40′ N. and 84° 59′ E.

So far as regards navigation, the Son is mainly used for floating down large rafts of bamboos and a little timber. During the rainy season, native boats of large tonnage occasionally proceed for a short distance up stream; but navigation is then rendered dangerous by the extraordinary violence of the flood, and throughout the rest of the year becomes impossible, owing to the small depth of water. The irrigation system in South Bihār known as the SON CANALS is served by this river, the water being distributed west to Shāhābād and east to Gayā and Patna from a dam constructed at DEHRĪ. In the lower portion of its course the Son is marked by several striking characteristics. Its bed is enormously wide, in some places stretching for three miles from bank to bank. During the greater part of the year this broad channel is merely a waste of drifting sand, with an insignificant stream that is nearly everywhere fordable. The discharge of water at this time is estimated to fall as low as 620 cubic feet per second. But in the rainy season, and especially just after a storm has burst on the plateau of Central India, the river rises with incredible rapidity. The entire rainfall of an area of about 21,300 square miles requires to find an outlet by this channel, which frequently proves unable to carry off the total flood discharge, calculated at 830,000 cubic feet per second. These heavy floods are of short duration, seldom lasting for more than four days; but in recent years they have wrought much destruction in the low-lying plains of Shāhābād. Near the site of the great dam at Dehrī the Son is crossed by the grand trunk road on a stone causeway; and lower down, near Koelwār, the East Indian Railway has been carried across on a lattice-girder bridge. This bridge, begun for a single line of rails in 1855, and finally completed for a double line in 1870, has a total length of 4,199 feet from back to back of the abutments.

The Son possesses historical interest as being probably identical with the *Erannoboas* of Greek geographers, which is thought to be a corruption of *Hiranya-Vāhu*, or 'the golden-armed' (a title of Siva), a name which the Son anciently bore. The old town of Pālibothrā or Pātaliputra, corresponding to the modern PATNA, was situated at the confluence of the *Erannoboas* and the Ganges; and, in addition, we know that the junction of the Son with the Ganges has been gradually receding westwards. Old channels of the Son have been found between Bankipore and Dinapore, and even below the present site of Patna. In the Bengal Atlas of 1772 the junction is marked near Maner, and it would seem to have been at the same spot in the seventeenth century; it is now about ten miles higher up the Ganges.

Jumna (*Yamuna*; the *Diamouna* of Ptolemy, *Jomanes* of Pliny, and *Jobares* of Arrian).—A great river of Northern India. Rising in the Tehrī State (31° 1′ N., 78° 27′ E.), eight miles west of the lofty mountain Bandarpūnch (20,731 feet), it flows past the sacred shrine of Jamnotrī, and winds through the Outer Himālayas for eighty miles, receiving a few small streams. At the point where it passes into the Dūn, the valley between the Himālayas and the Siwāliks, it receives the TONS, which is there the larger stream. Its course now runs south-west for 22 miles, dividing the Kiarda Dūn (Punjab) from Dehra Dūn (United Provinces); two large affluents, the Giri from Sirmūr on the west and the Asan from Dehra on the east, join it here. The Jumna pierces the Siwāliks 95 miles from its source, at Khārā, and divides Ambāla and Karnāl Districts in the Punjab from Sahāranpur and Muzaffarnagar in the United Provinces. It is a large river at Faizābād, where it gives off the WESTERN and EASTERN JUMNA CANALS. Near Bidhaulī in Muzaffarnagar it turns due south, and runs in that direction for 80 miles, dividing Meerut District from the Punjab, till it reaches Delhi. Ten miles below Delhi it gives off the AGRA CANAL from its western bank at Okhla. It then turns south-east for 27 miles to Dankaur, when it again resumes a southerly course. In this portion it receives on the east the Kotha Nadī and the HINDAN, and on the west the Sabī Nadī. Below Delhi the river forms the boundary between Gurgaon District in the Punjab and Bulandshahr and Alīgarh Districts in the United Provinces. It then enters Muttra and, crossing it, turns east till the borders of Agra are reached. Throughout its course in this District, where it receives the BĀNGANGĀ, also in Etāwah, it winds in a remarkable manner, its bed

lying deep between high banks which are furrowed by steep ravines. Just before Jālaun District is reached the great river CHAMBAL from Rājputāna joins it, and the Jumna then divides the three Districts of Cawnpore, Fatehpur, and Allahābād from Jālaun, Hamīrpur, and Bāndā. In Cawnpore District the Sengar, and in Fatehpur the Non and Rind, flow into it; close to Hamīrpur it receives the BETWĀ, and in Bāndā District the KEN. It finally falls into the GANGES below Allahābād, 860 miles from its source.

The Jumna, after issuing from the hills, has a longer course in the United Provinces than the Ganges; but it is not so large or important a stream, and does not carry as much water as is required by the canals taken from it. The supply is therefore increased from the Ganges by means of the cut into the HINDAN; and the Irrigation Commission (1901) recently proposed to make more water from the Ganges available by increasing the supply of the Lower Ganges Canal through a cut from the SĀRDĀ. The Jumna supplies drinking-water to the cities of Agra and Allahābād, which possesses, when fresh, special virtue in destroying the enteric microbe. It is crossed by railway bridges near Sarsāwā in Sahāranpur, at Delhi, Muttra, Agra, Kālpī (2,626 feet in width), and Allahābād (3,230 feet). The breadth of water-surface in the dry season varies from 2,600 feet at Okhla and 1,500 feet at Kālpī to 2,200 feet at Allahābād. The discharge in flood at Okhla is about 41,000 cubic feet per second, but this dwindles away to less than 200 in the dry season. The Jumna drains a total area of about 118,000 square miles.

The traffic on the Jumna was formerly of some importance, and large sums were spent in clearing away reefs of *kankar* (nodular limestone) and conglomerate in Etāwah District. Before the opening of the East Indian Railway, much cotton grown in Bundelkhand was sent down the river from Kālpī. At present timber is carried down the upper portion, and stone and grain in the lower courses. The principal towns on or near its bank are: Delhi in the Punjab; and Bāghpat, Māt, Brindāban, Muttra, Mahāban, Agra, Fīrozābād, Batesar, Etāwah, Kālpī, Hamīrpur, and Allahābād in the United Provinces.

Tons, Northern.—A river in Tehrī State and Dehra Dūn District, United Provinces. It rises north of the Jamnotrī peaks (31° 5′ N., 78° 31′ E.), a few miles from the sources of the Jumna, and first issues as a stream called Sūpin, 31 feet wide and knee-deep, from a snow-bed 12,784 feet above sea-level. After a westerly course of thirty miles in a series of

cascades, it receives the waters of the Rūpin, a rapid torrent, and from this point the united stream is called Tons. Nineteen miles lower down it is joined by the Pābar, and the river then forms the boundary between JAUNSĀR-BĀWAR in Dehra Dūn District and the Native States of Jubbal and Sirmūr in the Punjab. Its course here is tortuous, but generally southerly; and after receiving the Shalwī, a considerable stream, it joins the JUMNA, after a total course of 100 miles, at an elevation of 1,686 feet above sea-level. The volume of the Tons at the confluence is greater than that of the Jumna, so that it may be regarded as the principal head-water of that river. Its average fall is 110 feet per mile, and it is thus of no use for navigation or irrigation.

Hindan (also called Chhaja in its upper course).—A river of the United Provinces, rising in the southern slopes of the Siwāliks in Sahāranpur District (30° 7′ N., 77° 47′ E.), and draining the central portions of Sahāranpur, Muzaffarnagar, and Meerut. It flows generally towards the south-west, and falls into the JUMNA after a course of 160 miles, a few miles after entering the north-western corner of Bulandshahr. The KĀLĪ NADĪ WEST is the chief tributary. Its water is nowhere used for irrigation, but part of its channel forms an important link between the Ganges and Jumna. Thus water can be passed into the Hindan from the UPPER GANGES CANAL, and thence, by means of a cut made from a point close to Ghāziābād in 1877, into the Jumna above Okhla, increasing the supply of water for the AGRA CANAL. This cut was made wider in 1884 and further improved in 1901, and is now navigable.

Kālī Nadī, West.—A tributary of the HINDAN, about 70 miles long, rising in the Sahāranpur District of the United Provinces (30° N., 77° 45′ E.), 16 miles from the Siwāliks, and flowing south-west and south through Sahāranpur and Muzaffarnagar, between the Hindan and the Ganges Canal. Its junction with the Hindan is at the point where the latter river enters Meerut.

Chambal.—A river of Central India and Rājputāna, and one of the chief tributaries of the Jumna. It rises in the Indore State, about 9 miles south-west of Mhow cantonment, in the Janapao hill, 2,019 feet above the sea, in 22° 27′ N. and 75° 31′ E. Thence it flows down the northern slopes of the Vindhyan range, with a northward course generally, through Gwalior, Indore, and Sītāmau, and skirts Jhālawār, entering Rājputāna at Chaurāsgarh, 195 miles from its source. It receives many tributaries in Central India, the chief being the

Chamblā and the Siprā, both of which rise in the Vindhyan mountains. In Rājputāna the Chambal breaks through a scarp of the Patār plateau, the bed getting narrower and narrower, and after a winding course of 30 miles it receives the Bāmani at Bhainsrorgarh. Some three miles above the latter place are the well-known cascades or *chūlis*, the chief of which has an estimated fall of 60 feet. Here whirlpools are formed in huge caverns, 30 and 40 feet in depth, between some of which there is communication underground. Continuing north-east, the river forms for a short distance the boundary between Būndi and Kotah; and near Kotah city it is a broad sluggish stream, very blue in colour, flowing between magnificent overhanging cliffs and rocks rising sheer out of the water, covered with trees and thick brushwood and famous as game preserves. At the city there is a pontoon bridge, replaced by a ferry during the rains in consequence of the high and sudden floods to which the river is subject. Lower down, the Chambal again forms the boundary between Kotah and Būndi, and on its left bank is the interesting old village of Keshorai Pātan. The character of the scenery now alters completely. Above Kotah the neighbouring country is all precipitous rock, with wild glens and gullies and thick tangled overhanging brushwood, while below Pātan there are gently sloping banks, occasionally very picturesquely wooded and much intersected by channels. Continuing north-east, the river is joined by the Kālī Sind from the south and the Mej from the west, while lower down, where the frontiers of Jaipur, Kotah, and Gwalior meet, the Pārbati flows into it. The Chambal then forms the boundary between Jaipur, Karauli, and Dholpur on the one side and Gwalior on the other. From Jaipur territory it receives the Banās, and, flowing under an irregular lofty wall of rock along the whole southern border of Karauli, it emerges into the open country south of Dholpur town. Here it is, during the dry season, a sluggish stream 300 yards wide and 170 feet below the level of the surrounding country; but in the rains it generally rises about 70 feet, and in extreme floods nearly 100 feet above summer level. The breadth then increases to more than 1,000 yards, and the current runs at the rate of $5\frac{1}{2}$ miles an hour. The banks are intersected by a labyrinth of ravines, some of which are 90 feet deep and run back inland for a distance of three miles. At Rājghāt, three miles south of Dholpur town on the high road between Agra and Bombay, a bridge of boats is kept up between November and June, while a large ferry-boat plies during the rest of the year. A little to th

this *ghāt* the river is crossed by a fine railway bridge of thirteen spans. After forming the boundary between the State of Gwalior and Agra and Etāwah Districts in the United Provinces, the Chambal crosses the latter, and falls into the Jumna 25 miles south-west of Etāwah town. After the two rivers have united, the crystal current of the Chambal may be distinguished for some distance from the muddy waters of the main stream. The total length of the river is about 650 miles, though the distance from its source to its junction with the Jumna is only 330 miles in a straight line. The Chambal is identified with the Charmwati of Sanskrit writers.

Bānganga (or Utangan).—A river of Northern India, rising in Jaipur territory near BAIRĀT (27° 24′ N. and 76° 10′ E.). It flows, generally in an easterly direction, through the States of Jaipur, Bharatpur, and Dholpur, and the District of Agra in the United Provinces, and after a course of about 235 miles joins the Jumna ten miles east of Fatehābād in Agra District.

The word Bāngangā (Vānagangā) means literally 'arrow river.' The story goes that the five Pāndava brothers, on going into hiding at Bairāt (Vairāta), concealed their sacred weapons in a tree, and swore that before using them again they would purify them by washing them in the Ganges. One of the brothers, Arjun, had occasion to use his weapons against the Kurus. The Ganges being far off, he shot an arrow into the ground and immediately a spring of the sacred Ganges water issued, which became the source of the Bāngangā.

Between 1848 and 1856 small irrigation works were made in Agra District and Bharatpur State; but these had the effect of diverting the course of the Bāngangā, and did so much damage that in 1864 the works in Agra were totally closed, and in 1869 operations were undertaken in Bharatpur to bring back the river to its old course. Near the village of Gopālgarh in the Rāmgarh hills, about 25 miles below the source, the waters of the river are impounded by a dam 80 feet in height to form the Rāmgarh reservoir, the most important irrigation work in the Jaipur State. This lake when full covers an area of six square miles, and can under exceptional circumstances contain 3,000 million cubic feet of water; but ordinarily about half this quantity, or sufficient to irrigate more than 13,000 acres, is impounded. The project is practically complete and has cost nearly five lakhs of rupees. Some smaller works have been carried out in the Bharatpur State. Rāmgarh is said to have once been the capital of the Jaipur State under the name of Māshi; there is a temple in the gorge called Jumwa Devī

which is visited by the Mahārājās of Jaipur on their accession to the *gaddi*. Here they are shaved, the process being part of the ceremony connected with the accession.

The stream in the gorge near Rāmgarh is perennial, but lower down the bed dries up except during the rains. The banks are for the most part low, and in Bharatpur are covered, often to a distance of two or three miles from the stream, with a dense growth of jungle grass and tamarisk. In Dholpur territory ravines run inland from either bank, sometimes for a distance of two miles or more. Where it first touches the United Provinces, the Bāngangā is a mountain torrent with a bed of sand mixed with gravel. The principal tributaries are the Gambhīr, Kawār or Koela, and Pārvatī on the right bank, and the Khārī on the left. The Bāngangā and Khārī often bring down disastrous floods. In Bharatpur the violence of these has given the river the name of Ghora-pachhār or 'overthrower of horses.'

[*Papers relating to the Irrigation of the Agra District from the Utangan River* (Roorkee, 1853–4).]

Betwā (*Vetravatī*, or 'containing canes').—A large river of Northern India. It rises in Bhopāl State at the village of Kumrī (22° 55′ N. and 77° 43′ E.), and flows in a generally north-eastern direction; after a course of about 50 miles in Bhopāl it enters Gwalior territory near Bhīlsa. It first touches the United Provinces in the south-west corner of the Lalitpur *tahsīl* of Jhānsi District, and flows north and north-east, forming the boundary between that District and the Gwalior State. It then crosses the District obliquely, traverses part of the Orchhā State, and flows for some distance between Jālaun on the north and Jhānsi and Hamīrpur on the south, falling into the Jumna, after a course of about 190 miles in the United Provinces, close to the town of Hamīrpur. In the upper part of its course the Betwā flows over the Vindhya sandstone, crossed by veins of quartz which break it up into beautiful cascades. At DEOGARH it passes in a magnificent sweep below a steep sandstone cliff on the eastern bank, surmounted by a ruined fort. Below Jhānsi its bed is granite for about 16 miles till it reaches the alluvial plain. It is nowhere navigable, and its crossings are often dangerous. There are railway bridges at Barkhera on the Bhopāl-Hoshangābād section of the Great Indian Peninsula, at Sānchī on the Bhopāl-Jhānsi section, at Mangaolī on the Bīna-Guna line, and near Orchhā on the Mānikpur-Jhānsi line. Road bridges cross it at Bhīlsa and at Orchhā. At Parīchhā, 15 miles from Jhānsi, the

river has been dammed to supply the Betwā Canal, a protective work which serves part of Jhānsi, Jālaun, and Hamīrpur, and was found of great value in 1896–7. Proposals are under consideration for damming the river at other places, so as to increase the amount of water available, and one dam has recently been completed. The chief tributaries are the Bes in Central India, the Jamnī and DHASĀN in Jhānsi, and the Pāwan in Hamīrpur. The river is mentioned in the Purānas, and also in the *Meghadūta* of Kālidāsa. According to tradition, the Pāndavas fought with the king of Videsa (Bhīlsa) on its banks.

Dhasān (*Dashārnā*; possibly the *Dasaron* of Ptolemy).—A river of Northern India. It rises in Bhopāl State (23° 32′ N., 78° 30′ E.) among the Vindhyas, and after crossing Saugor District in the Central Provinces for about 60 miles, first touches the United Provinces in the extreme south of the Lalitpur *tahsīl* of Jhānsi District, which it divides from Saugor for about 30 miles. It then crosses several of the Bundelkhand States, and finally forms the boundary between Jhānsi and Hamīrpur for nearly 70 miles, till its junction with the BETWĀ at Chandwārī on the border of Jālaun District. The bed of the Dhasān is rocky in Saugor and Lalitpur, and at intervals after it first enters Jhānsi and Hamīrpur, but is then generally sandy, with nullahs and ravines running into it. Except during the rains it is easily fordable. A scheme has been sanctioned for the provision of irrigation in the west of Hamīrpur by damming this river and forming a reservoir.

Ken (or Kayān; Skt. *Karnāvati*; the *Kainas* of Arrian).—A river of Bundelkhand. It rises in the north-western slopes of the Kaimur Hills (23° 54′ N., 80° 10′ E.), and flowing north-east through Damoh and Pannā enters Bāndā District in the United Provinces near Bilharkā. After a course of more than 100 miles along the border of and through Bāndā, it joins the JUMNA near Chillā, on the road from Bāndā to Fatehpur, 230 miles from its source. The river flows in a deep, well-defined bed, and is navigable for small boats as far as Bāndā town; but there is not much traffic. At Bāndā the bed is sandy, but pebbles and fragments of quartz and other rocks are found in it, which are polished and made into ornaments. Above Bāndā the bed becomes more rocky, and the scenery near Kharaunī is singularly beautiful. A canal taking off from the river near Bariārpur in the Ajaigarh State has recently been completed. At present it is designed to irrigate only a part of Bāndā District, namely, the area between the Ken and Bāghain, of which it will command about

half, or 374,000 acres. The reservoir formed in connexion with this project will impound about 182 million cubic feet of water in the valley of the river.

Sārdā.—The name given to part of a river-system flowing from the Himālayas through north-western Oudh. Two streams, the Kuthi Yānkti and Kālāpānī, rising in the lofty Pānch Chūlhī mountains in the north-east corner of Kumaun close to the Tibet frontier, unite after a few miles to form the Kālī river or Kālī Gangā, which divides Nepāl from Kumaun. At a distance of 106 miles from its source, the Kālī receives the Sarjū or Rāmgangā (east) at Pacheswar. The Sarjū and its tributary, the Rāmgangā (east), rise in a lofty range leading south from the peak of Nandā Kot, and unite at Rāmeswar, from which point the combined stream is called indifferently by either name. From the junction at Pacheswar the name Kālī is gradually lost and the river is known as Sarjū or as Sārdā. At Barmdeo the waters descend on the plains in a series of rapids, the course to this point being that of a mountain stream over a steep rocky bed. The Sārdā now divides into several channels, which reunite again after a few miles at Mundiā Ghāt (ferry), where the last rapids occur, and the bed ceases to be composed of boulders and shingle. From this point the river forms the boundary between Nepāl and Pīlībhīt District of the United Provinces for a short distance, and then cuts across and enters Kherī District. In Pīlībhīt it is joined on the right bank by the Chaukā, which is now a river of the plains, rising in the Tarai, but may have been originally formed as an old channel of the Sārdā. The river is at first called both Sārdā and Chaukā in Kherī, and its description is rendered difficult by the many changes which have taken place in its course. Four distinct channels may be recognized, which are, from south to north, the Ul, the Sārdā or Chaukā, the Dahāwar, and the Suhelī. The first of these is a small stream which joins the Chaukā again. The name Sārdā is occasionally applied to the second branch in its lower course through Sītāpur, but this is more commonly called Chaukā. After a long meandering course it falls into the GOGRA at Bahrāmghāt. This channel appears to have been the principal bed from the middle of the eighteenth to the middle of the nineteenth century. The largest volume of water is, however, at present brought down by the Dahāwar, which leaves the Chaukā in *pargana* Dhaurahrā. The Suhelī brings down little water and joins the KAURIĀLA (afterwards called the Gogra).

Chaukā.—A river of Oudh, being one of the branches into which the SĀRDĀ splits up in Kherī District. Its channel now contains little water, but has a long course through Kherī, Sītāpur, and Bāra Bankī, joining the GOGRA near Bahrāmghāt. The name is also applied to an old bed of the Sārdā which now joins that river in Pīlībhīt.

Kauriāla (also called Karnāli).—A river of Northern India, rising in Tibet, not far from one of the sources of the Sutlej, in 30° 40′ N. and 80° 48′ E. After leaving Tibet by the Taklā Khār or Yāri Pass, it flows through Nepāl, generally in a south-easterly direction, till it emerges from the lower range of the Himālayas through a deep picturesque gorge known as Shīshā Pānī ('glass water'). The stream here is about 300 yards broad and of great depth, with a slow current, closely shut in by precipitous mountains 2,500 feet high. A little below Shīshā Pānī the channel widens, with a steeper and rockier descent, causing magnificent rapids nearly half a mile broad. Lower down the river divides into two, the western branch retaining the name of Kauriāla or Karnāli, the eastern being called the GIRWĀ. Formerly the latter was an insignificant stream, but its volume has gradually increased till it is now considerably larger than that of the Kauriāla. They are both rapid rivers, with pebbly beds and fords which an elephant can generally cross without difficulty. Eighteen miles from its point of exit from the hills the Kauriāla enters British territory, at the point where it receives the Mohan, and marks the boundary between the Oudh Districts of Kherī and Bahraich. It now receives on the east bank its former offshoot, the Girwā, and on the west the Suhelī, the Dahāwar, and the Chaukā, all branches of the SĀRDĀ river. From the point of confluence with the Chaukā the united rivers become the GOGRA, which ultimately falls into the Ganges on its left bank, a little above Dinapore. The Kauriāla is navigable by large boats of about 17 tons burthen beyond the limits of British territory. The principal traffic is the export of grain, and of timber, ginger, pepper, *ghī*, and catechu from Nepāl. Gold-washing is carried on by a caste called after their occupation Sonāhīs. The river abounds in fish.

Girwā.—A branch of the KAURIĀLA river in Nepāl and Oudh. The Kauriāla bursts through a gorge in the Himālayas called Shīshā Pānī, or 'glass water,' and a little below this point divides into two, the western branch retaining the name Kauriāla, while the eastern is called Girwā. The latter is now the more considerable, though it was formerly the smaller of

the two. In its upper course the Girwā is a rapid stream with a pebbly bed; but it becomes navigable at Dhanaura before entering British territory, and grain, timber, ginger, pepper, and *ghī* are carried down it from Nepāl. It reunites with the Kauriāla a few miles below Bharthāpur in Bahraich District.

Gogrā (*Ghāgra*; Skt. *gharghara* ('rattling' or 'laughter'); other names, Sarjū or Sarayū (the *Sarabos* of Ptolemy), and in the lower part of its course Deohā or Dehwā).—The great river of Oudh. Rising in Tibet (30° 40′ N. and 80° 48′ E.), it flows through Nepāl under the name Karnāli or KAURIĀLA, piercing the Himālayas at Shīshā Pānī, and shortly after throws off a branch to the east called the GIRWĀ, which now brings down the main stream. The Kauriāla enters British territory between Kherī and Bahraich, and forms the boundary between those Districts. It receives the Girwā not many miles from the border, and just below this the Suhelī, one of the three branches of the SĀRDĀ. The main branch of the Sārdā, called Dahāwar, joins it at Mallānpur, a few miles below Katai Ghāt, near which place the Sarjū is received. The Sarjū formerly joined the Gogra in Gondā, but early in the nineteenth century a European timber merchant diverted its course into an old bed. At Bahrāmghāt a third branch of the Sārdā, named Chaukā, adds to its volume, and from this point the united stream is regularly called Gogrā or Sarjū, though these names are sometimes applied at Mallānpur. From the name Sarjū is derived the appellation of an important tribe of Brāhmans called Sarwaria, a contraction of Sarjūpāria, meaning those who dwell beyond (i.e. on the north side of) the Sarjū. The Gogrā now turns east and divides Gondā on its north bank from Bāra Bankī and Fyzābād on the south. After passing Ajodhyā city, it separates Bastī and Gorakhpur from Fyzābād, and then from Azamgarh and Balliā, and receives the RĀPTĪ and LITTLE GANDAK from the north. After being joined by the Chaukā it receives little drainage from the right bank, and is in fact higher than the valley of the Gumtī which lies south of it. In Azamgarh a branch is given off, called the Chhotī ('lesser') Sarjū, which was apparently an old bed of the river, and joins the Ganges after a long course through Azamgarh, Ghāzīpur, and Balliā. East of Gorakhpur District the Gogra forms the boundary between Sāran District of Bengal and Balliā District of the United Provinces for about 40 miles. It falls into the Ganges in 25° 44′ N. and 84° 42′ E.

The Kauriāla and Girwā are both navigable for a short distance before entering British territory; and until the opening

of the Bengal and North-Western Railway, within the last twenty years, trade on the Gogra was of great importance. Many years ago a pilot service existed for a short time, and steamers plied as far as Bahrāmghāt in Bāra Bankī District. The traffic is still considerable, and large quantities of timber, grain, and spices come down from Nepāl, or are carried in the lower reaches. At Bahrāmghāt saw-mills used to be worked by the Forest department, but have recently been sold. The most important place on the banks of the river is Fyzābād, with Ajodhyā, the sacred birthplace of Rāma, adjoining it. Tāndā in Fyzābād and Barhaj in Gorakhpur are also towns of some size, engaged in trade. The chief mart on the banks of the Gogra in Bengal is Revelganj in Sāran District. The trade of Nawābganj in Gondā, which stands some miles from the river, is now largely carried by rail. River steamers from Patna ply as high as Ajodhyā, calling at many places and competing with the railways for both goods and passenger traffic.

The river is spanned by two fine railway bridges: the Elgin Bridge near Bahrāmghāt (3,695 feet long), and a bridge at Turtīpār (3,912 feet). The variability of its course is shown by the method of construction of the first-named bridge, which was built on dry land, the river being then trained under it. The height above sea-level is 350 feet at Bahrāmghāt and 193 feet at Turtīpār; and the flood discharges are 877,000 and 1,111,000 cubic feet per second respectively. At Ajodhyā a bridge of boats is maintained, except during the rains, when a steamer plies. Another important ferry is at Dohrīghāt on the road from Azamgarh to Gorakhpur.

Rāptī [identified by Lassen with the *Solomatis* of Arrian = Skt. *Sarāvatī*; by Pargiter with the *Sadānīra* ('ever-flowing') of the epics; also called *Irāvatī* ('refreshing')].—A river which rises in the lower ranges of Nepāl (27° 49′ N., 82° 44′ E.), and joins the GOGRA in Gorakhpur District of the United Provinces. Its course is first south and then north-west and west, after which it again turns south and crosses the border of Oudh in Bahraich District. It then flows south-east or south through Bahraich, Gondā, Bastī, and Gorakhpur Districts, with a total course of about 400 miles. Its wide bed is confined within high banks, but the actual channel shifts considerably. Floods are not uncommon, but do little damage, if they subside in time for spring crops to be sown, as the silt deposited acts as a fertilizer. The feeders of this river are chiefly small rivers rising in the *tarai* north of its course, the largest being the Dhamela, joined by the Ghūnghī, and the Rohini, in Gorakhpur. In Gondā and

Bastī an old bed of the river, called the Būrhī Rāptī, some miles north of its present course, brings down a considerable amount of water in the rains. The BAKHIRA LAKE in Bastī District and the Chilūā lake in Gorakhpur drain into it. The Rāptī is navigable for small boats as high as Bhingā in Bahraich, and for large boats to the town of Gorakhpur, which stands near its banks. Much timber and grain from Nepāl and the British Districts which it traverses are carried down into the Gogra, and hence into the Ganges; but the traffic has fallen off since the extension of the Bengal and North-Western Railway. The Rāptī is rarely used for irrigation.

Bāngangā ('Arrow-river').—A hill stream rising in the south of Nepāl (27° 42′ N., 83° 6′ E.), which flows for about 18 miles through Bastī District and joins the Būrhī Rāptī ('old' Rāptī) at Kabrahī Ghāt, where the road from Bastī through Bānsī to Nepāl crosses the latter river. Timber from Nepāl is floated down. Traces of the bed of another river of the same name still exist south of the Rāptī and the upper course of the Katnehiā. A tributary of the Kuwānā in Bastī, which formed one branch of this, is still called Bāngangā.

[Cunningham, *Archaeological Survey Reports*, vol. xxii, p. 4.]

Gandak, Great.—A river of Northern India. Rising in the central mountain basin of Nepāl, in 27° 27′ N. and 83° 56′ E., where its sources are known as the Sapt Gandakī, or 'country of the seven Gandaks,' it drains the tract between the Dhaulāgiri and Gosainthān mountains. The most important of these contributory streams is the Trisūlgangā, and they all unite before breaking through the mountains at Tribenī. The river is also known in Nepāl as the Sālgrāmi, and in the United Provinces as the Nārāyani; it is the *Kondochates* of the Greek geographers, and according to Lassen the *Sadānīra* ('ever-flowing') of the epics. Crossing the British frontier at Tribenī, it forms the boundary between Champāran District of Bengal and Gorakhpur District of the United Provinces for about 20 miles, after which it flows for 40 miles within Champāran, and then once more separates the Provinces for 12 miles of its course. Thenceforward it forms the boundary between Sāran District of Bengal on the south-west and Champāran and Muzaffarpur Districts on the north-east, and it finally joins the Ganges opposite Patna, in 25° 41′ N. and 85° 12′ E., after a course of 192 miles. At first a snow-fed torrent, the Gandak, soon after its entry into British territory, acquires the character of a deltaic river, its banks being above the level of the surrounding country, which is protected by embankments

from inundation. The river is navigable throughout the year by country boats below Bagahā in Champāran District. Rafts of timber pass down it from Nepāl and from the Gorakhpur forests, and grain and sugar are exported by the same route. Navigation is, however, difficult, as the channel during the dry season is narrow and winding, while in the rains it becomes a torrent. In the hot season the river is rarely more than a quarter of a mile across, but in the rains it widens to 2 or 3 miles. It is nowhere fordable, and is continually changing its course. The TRIBENĪ CANAL, now under construction, will carry its waters eastward to within 10 miles of Adāpur in Champāran District, and will irrigate the portion of that District most liable to famine. The SĀRAN CANALS are fed from a side-channel on the right bank of the river. The Būrhi ('old') Gandak, or Sikrāna, an old channel of the river, is described in the article on CHAMPĀRAN DISTRICT. A fine railway bridge on the Bengal and North-Western Railway spans the Gandak near its mouth. The most important place on its bank is HĀJĪPUR on the left bank, and a great bathing festival takes place annually at SONPUR at its confluence with the Ganges.

Gandak, Little.—A river which rises in the lower Nepāl hills, and enters Gorakhpur District of the United Provinces a few miles west of the GREAT GANDAK. It flows from north to south through the whole length of Gorakhpur, and joins the GOGRA just within Sāran District of Bengal. Except in the rains it has a small stream, not exceeding 60 feet in breadth, and is generally fordable. In 1859 it was proposed to make it into a navigable canal, but the scheme was never carried out. Boats ply during the rains as high as Ragarganj in the Padraunā *tahsīl*.

Himālayas, The.—A system of stupendous mountain ranges, lying along the northern frontiers of the Indian Empire, and containing some of the highest peaks in the world. Literally, the name is equivalent to 'the abode of snow' (from the Sanskrit *hima*, 'frost,' and *ālaya*, 'dwelling-place'). To the early geographers the mountains were known as Imaus or Himaus and Hemodas; and there is reason to believe that these names were applied to the western and eastern parts respectively, the sources of the Ganges being taken as the dividing line. 'Hemodas' represents the Sanskrit *Himāvata* (Prākrit *Hemota*), meaning 'snowy.' The Greeks who accompanied Alexander styled the mountains the Indian Caucasus. Name.

Extent of range.

Modern writers have sometimes included in the system the Muztāgh range, and its extension the Karakoram; but it is now generally agreed that the Indus should be considered the north-western limit. From the great peak of Nanga Parbat in Kashmīr, the Himālayas stretch eastward for twenty degrees of longitude, in a curve which has been compared to the blade of a scimitar, the edge facing the plains of India. Barely one-third of this vast range of mountains is known with any degree of accuracy. The Indian Survey department is primarily engaged in supplying administrative needs; and although every effort is made in fulfilling this duty to collect information of purely scientific interest, much still remains to be done.

Political distribution.

A brief abstract of our knowledge of the Himālayas may be given by shortly describing the political divisions of India which include them. On the extreme north-west, more than half of the State of KASHMĪR AND JAMMU lies in the Himālayas, and this portion has been described in some detail by Drew in *Jammu and Kashmīr Territories*, and by Sir W. Lawrence in *The Valley of Kashmīr*. The next section, appertaining to the Punjab and forming the British District of Kāngra and the group of feudatories known as the Simla Hill States, is better known. East of this lies the Kumaun Division of the United Provinces, attached to which is the Tehrī State. This portion has been surveyed in detail, owing to the requirements of the revenue administration, and is also familiar from the careful accounts of travellers. For 500 miles the State of Nepāl occupies the mountains, and is to the present day almost a *terra incognita*, owing to the acquiescence by the British Government in the policy of exclusion adopted by its rulers. Our knowledge of the topography of this portion of the Himālayas is limited to the information obtained during the operations of 1816, materials collected by British officials resident at Kātmāndu, notably B. H. Hodgson, and the accounts of native explorers. The eastern border of Nepāl is formed by the State of Sikkim and the Bengal District of Darjeeling, which have been graphically described by Sir Joseph Hooker and more recently by Mr. Douglas Freshfield. A small wedge of Tibetan territory, known as the Chumbi Valley, separates Sikkim from Bhutān, which latter has seldom been visited by Europeans. East of Bhutān the Himālayas are inhabited by savage tribes, with whom no intercourse is possible except in the shape of punitive expeditions following raids on the plains. Thus a stretch of nearly 400 miles in the eastern portion of the range is imperfectly known.

In the western part of the Himālayas, which, as has been shown, has been more completely examined than elsewhere, the system may be divided into three portions. The central or main axis is the highest, which, starting at Nanga Parbat on the north-west, follows the general direction of the range. Though it contains numerous lofty peaks, including Nandā Devī, the highest mountain in British India, it is not a true water-shed. North of it lies another range, here forming the boundary between India and Tibet, which shuts off the valley of the Indus, and thus may be described as a real water-parting. From the central axis, and usually from the peaks in it, spurs diverge, with a general south-easterly or south-westerly direction, but actually winding to a considerable extent. These spurs, which may be called the Outer Himālayas, cease with some abruptness at their southern extremities, so that the general elevation is 8,000 or 9,000 feet a few miles from the plains. Separated from the Outer Himālayas by elevated valleys or *dūns* is a lower range known as the SIWĀLIKS, which is well marked between the Beās and the Ganges, reappears to the south of central Kumaun, and is believed to exist in Nepāl. Although the general character of the Himālayas in Nepāl is less accurately known, there is reason to suppose that it approximates to that of the western ranges. Divisions of range.

Within the limits of this great mountain chain all varieties of scenery can be obtained, except the placid charm of level country. Luxuriant vegetation clothes the outer slopes, gradually giving place to more sombre forests. As higher elevations are reached, the very desolation of the landscape affects the imagination even more than the beautiful scenery left behind. It is not surprising that these massive peaks are venerated by the Hindus, and are intimately connected with their religion, as giving rise to some of the most sacred rivers, as well as on account of legendary associations. A recent writer has vividly described the impressions of a traveller through the foreground of a journey to the snows in Sikkim[1]:— Scenery.

'He sees at one glance the shadowy valleys from which shining mist-columns rise at noon against a luminous sky, the forest ridges, stretching fold behind fold in softly undulating lines—dotted by the white specks which mark the situation of Buddhist monasteries—to the glacier-draped pinnacles and precipices of the snowy range. He passes from the zone of tree-ferns, bamboos, orange-groves, and *dal* forest, through an endless colonnade of tall-stemmed magnolias, oaks, and chestnut

[1] D. W. Freshfield in *The Geographical Journal*, vol. xix, p. 453.

trees, fringed with delicate orchids and festooned by long convolvuluses, to the region of gigantic pines, junipers, firs, and larches. Down each ravine sparkles a brimming torrent, making the ferns and flowers nod as it dashes past them. Superb butterflies, black and blue, or flashes of rainbow colours that turn at pleasure into exact imitations of dead leaves, the fairies of this lavish transformation scene of Nature, sail in and out between the sunlight and the gloom. The mountaineer pushes on by a track half buried between the red twisted stems of tree-rhododendrons, hung with long waving lichens, till he emerges at last on open sky and the upper pastures—the Alps of the Himālaya—fields of flowers: of gentians and edelweiss and poppies, which blossom beneath the shining store-houses of snow that encompass the ice-mailed and fluted shoulders of the giants of the range. If there are mountains in the world which combine as many beauties as the Sikkim Himālayas, no traveller has as yet discovered and described them for us.'

Snow-line. The line of perpetual snow varies from 15,000 to 16,000 feet on the southern exposures. In winter, snow generally falls at elevations above 5,000 feet in the west, while falls at 2,500 feet were twice recorded in Kumaun during the last century. Glaciers extend below the region of perpetual snow, descending to 12,000 or 13,000 feet in Kulū and Lāhul, and even lower in Kumaun, while in Sikkim they are about 2,000 feet higher. On the vast store-house thus formed largely depends the prosperity of Northern India, for the great rivers which derive their water from the Himālayas have a perpetual supply which may diminish in years of drought, but cannot fail absolutely to feed the system of canals drawn from them.

Rivers. While all five rivers from which the Punjab derives its name rise in the Himālayas, the Sutlej alone has its source beyond the northern range, near the head-waters of the Indus and Tsan-po. In the next section are found the sources of the Jumna, Ganges, and Kālī or Sārdā high up in the central snowy range, while the Kauriāla or Karnāli, known lower down in its course as the Gogra, rises in Tibet, beyond the northern watershed. The chief rivers of Nepāl, the Gandak and Kosi, each with seven main affluents, have their birth in the Himālayas, which here supply a number of smaller streams merging in the larger rivers soon after they reach the plains. Little is known of the upper courses of the northern tributaries of the Brahmaputra in Assam; but it seems probable that the Dihāng, which has been taken as the eastern boundary of the Himālayas, is the channel connecting the Tsan-po and the Brahmaputra.

Passing from east to west the principal peaks are Nanga Parbat (26,182) in Kashmīr; a peak in Spiti (Kāngra District) exceeding 23,000 feet, besides three over 20,000; Nandā Devī (25,661), Trisūl (23,382), Pānch Chūlhī (22,673), and Nandā Kot (22,538) in the United Provinces; Mount Everest (29,002), Devālagiri (26,826), Gosainthān (26,305) and Kinchinjunga (28,146), with several smaller peaks, in Nepāl; and Dongkya (23,190), with a few rising above 20,000, in Sikkim. Highest peaks.

The most considerable stretch of level ground is the beautiful Kashmīr Valley, through which flows the Jhelum. In length about 84 miles, it has a breadth varying from 20 to 25 miles. Elsewhere steep ridges and comparatively narrow gorges are the rule, the chief exception being the Valley of Nepāl, which is an undulating plain about 20 miles from north to south, and 12 to 14 miles in width. Near the city of Srīnagar is the Dal Lake, described as one of the most picturesque in the world. Though measuring only 4 miles by 2½, its situation among the mountains, and the natural beauty of its banks, combined with the endeavours of the Mughal emperors to embellish it, unite to form a scene of great attractions. Some miles away is the larger expanse of water known as the Wular Lake, which ordinarily covers 12½ square miles, but in years of flood expands to over 100. A number of smaller lakes, some of considerable beauty, are situated in the outer ranges in Naini Tāl District. In 1903 the GOHNĀ LAKE, in Garhwāl District, was formed by the subsidence of a steep hill, rising 4,000 feet above the level of a stream which it blocked. Valleys and lakes.

The geological features of the Himālayas can be conveniently grouped into three classes, roughly corresponding to the three main orographical zones: (1) the Tibetan highland zone, (2) the zone of snowy peaks and Outer Himālayas, and (3) the Sub-Himālayas. Geology[1].

In the Tibetan highlands there is a fine display of marine fossiliferous rocks, ranging in age from Lower Palaeozoic to Tertiary. In the zone of the snowy peaks granites and crystalline schists are displayed, fringed by a mantle of unfossiliferous rocks of old, but generally unknown, age, forming the lower hills or Outer Himālayas, while in the Sub-Himālayas the rocks are practically all of Tertiary age, and are derived from the waste of the highlands to the north.

The disposition of these rocks indicates the existence of a range of some sort since Lower Palaeozoic times, and shows Age and origin of the range.

[1] By T. H. Holland, Geological Survey of India.

that the present southern boundary of the marine strata on the northern side of the crystalline axis is not far from the original shore of the ocean in which these strata were laid down. The older unfossiliferous rocks of the Lower Himālayas on the southern side of the main crystalline axis are more nearly in agreement with the rocks which have been preserved without disturbance in the Indian Peninsula; and even remains of the great Gondwāna river-formations which include our valuable deposits of coal are found in the Darjeeling area, involved in the folding movements which in later geological times raised the Himālayas to be the greatest among the mountain ranges of the world. The Himālayas were thus marked out in very early times, but the main folding took place in the Tertiary era. The great outflow of the Deccan trap was followed by a depression of the area to the north and west, the sea in eocene times spreading itself over Rājputāna and the Indus valley, covering the Punjab to the foot of the Outer Himālayas as far east as the Ganges, at the same time invading on the east the area now occupied by Assam. Then followed a rise of the land and consequent retreat of the sea, the fresh-water deposits which covered the eocene marine strata being involved in the movement as fast as they were formed, until the Sub-Himālayan zone river-deposits, no older than the pliocene, became tilted up and even overturned in the great foldings of the strata. This final rise of the Himālayan range in late Tertiary times was accompanied by the movements which gave rise to the Arakan Yoma and the Nāgā hills on the east, and the hills of Baluchistān and Afghānistān on the west.

The rise of the Himālayan range may be regarded as a great buckle in the earth's crust, which raised the great Central Asian plateau in late Tertiary times, folding over in the Baikal region on the north against the solid mass of Siberia, and curling over as a great wave on the south against the firmly resisting mass of the Indian Peninsula.

As an index to the magnitude of this movement within the Tertiary era, we find the marine fossil foraminifer, *Nummulites*, which lived in eocene times in the ocean, now at elevations of 20,000 feet above sea-level in Zāskār. With the rise of the Himālayan belt, there occurred a depression at its southern foot, into which the alluvial material brought down from the hills has been dropped by the rivers. In miocene times, when presumably the Himālayas did not possess their present elevation, the rivers deposited fine sands and clays in this area; and as the elevatory process went on, these deposits became

tilted up, while the rivers, attaining greater velocity with their increased gradient, brought down coarser material and formed conglomerates in pliocene times. These also became elevated and cut into by their own rivers, which are still working along their old courses, bringing down boulders to be deposited at the foot of the hills and carrying out the finer material farther over the Indo-Gangetic plain.

The series of rocks which have thus been formed by the rivers, and afterwards raised to form the Sub-Himālayas, are known as the Siwālik series. They are divisible into three stages. In the lowest and oldest, distinguished as the Nāhan stage, the rocks are fine sandstones and red clays without any pebbles. In the middle stage, strings of pebbles are found with the sandstones, and these become more abundant towards the top, until we reach the conglomerates of the upper stage. Along the whole length of the Himālayas these Siwālik rocks are cut off from the older rock systems of the higher hills by a great reversed fault, which started in early Siwālik times and developed as the folding movements raised the mountains and involved in its rise the deposits formed along the foot of the range. The Siwālik strata never extended north of this great boundary fault, but the continued rise of the mountains affected these deposits, and raised them up to form the outermost zone of hills. **The Siwālik series.**

The upper stage of the Siwālik series is famous on account of the rich collection of fossil vertebrates which it contains. Among these there are forms related to the miocene mammals of Europe, some of which, like the hippopotamus, are now unknown in India but have relatives in Africa. Many of the mammals now characteristic of India were represented by individuals of much greater size and variety of species in Siwālik times.

The unfossiliferous rocks which form the Outer Himālayas are of unknown age, and may possibly belong in part to the unfossiliferous rocks of the Peninsula, like the Vindhyans and the Cuddapahs. Conspicuous among these rocks are the dolomitic limestones of Jaunsār and Kumaun, the probable equivalents of the similar rocks far away to the east at Buxa in the Duārs. With these a series of purple quartzites and basic lava-flow is often associated. In the Simla area the unfossiliferous rocks have been traced out with considerable detail; and it has been shown that quartzites, like those of Jaunsār and Kumaun, are overlaid by a system of rocks which has been referred to the carbonaceous system on account of **Unfossiliferous rocks of Outer Himālayas.**

the black carbonaceous slates which it includes. The only example known of pre-Tertiary fossiliferous rocks south of the snowy range in the Himālayas occurs in south-west Garhwāl, where there are a few fragmentary remains of mesozoic fossils of marine origin.

The crystalline axis.

The granite rocks, which form the core of the snowy range and in places occur also in the Lower Himālayas, are igneous rocks which may have been intruded at different periods in the history of the range. They are fringed with crystalline schists, in which a progressive metamorphism is shown from the edge of granitic rock outwards, and in the inner zone the granitic material and the pre-existing sedimentary rock have become so intimately mixed that a typical banded gneiss is produced. The resemblance of these gneisses to the well-known gneisses of Archaean age in the Peninsula and in other parts of the world led earlier observers to suppose that the gneissose rocks of the Central Himālayas formed an Archaean core, against which the sediments were subsequently laid down. But as we now know for certain that both granites, such as we have in the Himālayas, and banded gneisses may be much younger, even Tertiary in age, the mere composition and structure give no clue to the age of the crystalline axis. The position of the granite rock is probably dependent on the development of low-pressure areas during the process of folding, and there is thus a prima facie reason for supposing that much of the igneous material became injected during the Tertiary period. With the younger intrusions, however, there are probably remains of injections which occurred during the more ancient movements, and there may even be traces of the very ancient Archaean gneisses; for we know that pebbles of gneisses occur in the Cambrian conglomerates of the Tibetan zone, and these imply the existence of gneissose rocks exposed to the atmosphere in neighbouring highlands. The gneissose granite of the Central Himālayas must have consolidated under great pressure, with a thick superincumbent envelope of sedimentary strata; and their exposure to the atmosphere thus implies a long period of effectual erosion by weathering agents, which have cut down the softer sediments more easily and left the more resisting masses of crystalline rocks to form the highest peaks in the range. Excellent illustrations of the relationship of the gneissose granites to the rocks into which they have been intruded are displayed in the Dhaola Dhār in Kulū, in the Chor Peak in Garhwāl, and in the Darjeeling region east of Nepāl.

Beyond the snowy range in the Tibetan zone we have a remarkable display of fossiliferous rocks, which alone would have been enough to make the Himālayas famous in the geological world. The boundary between Tibetan territory and Spiti and Kumaun has been the area most exhaustively studied by the Geological Survey. The rocks exposed in this zone include deposits which range in age from Cambrian to Tertiary. The oldest fossiliferous system, distinguished as the Haimanta ('snow-covered') system, includes some 3,000 feet of the usual sedimentary types, with fragmentary fossils which indicate Cambrian and Silurian affinities. Above this system there are representatives of the Devonian and Carboniferous of Europe, followed by a conglomerate which marks a great stratigraphical break at the beginning of Permian times in Northern India. Above the conglomerate comes one of the most remarkably complete succession of sediments known, ranging from Permian, without a sign of disturbance in the process of sedimentation, throughout the whole Mesozoic epoch to the beginning of Tertiary times. The highly fossiliferous character of some of the formations in this great pile of strata, like the *Productus* shales and the Spiti shales, has made this area classic ground to the palaeontologist. Fossiliferous rocks of the Tibetan zone.

The great Eurasian sea distinguished by the name 'Thetys,' which spread over this area throughout the Palaeozoic and Mesozoic times, became driven back by the physical revolution which began early in Tertiary times, when the folding movements gave rise to the modern Himālayas. As relics of this ocean have been discovered in Burma and China it will not be surprising to find, when the ground is more thoroughly explored, that highly fossiliferous rocks are preserved also in the Tibetan zone beyond the snowy ranges of Nepal and Sikkim.

Of the minerals of value, graphite has been recorded in the Kumaun Division; coal occurs frequently amongst the Nummulitic (eocene) rocks of the foot-hills and the Gondwāna strata of Darjeeling District; bitumen has been found in small quantities in Kumaun; stibnite, a sulphide of antimony, occurs associated with ores of zinc and lead in well-defined lodes in Lāhul; gold is obtained in most of the rivers, and affords a small and precarious living for a few washers; copper occurs very widely disseminated and sometimes forms distinct lodes of value in the slaty series south of the snowy range, as in the Kulū, Kumaun, and Darjeeling areas; ferruginous schists sometimes rich in iron occur under similar geological conditions, as in Kāngra and Kumaun; sapphires of considerable Economic minerals.

value have been obtained in Zāskār and turquoise from the central highlands; salt is being mined in quantity from near the boundary of the Tertiary and older rocks in the State of Mandi; borax and salt are obtained from lakes beyond the Tibetan border; slate-quarrying is a flourishing industry along the southern slopes of the Dhaola Dhār in Kāngra District; mica of poor quality is extracted from the pegmatites of Kulū; and a few other minerals of little value, besides building stones, are obtained in various places. A small trade is developed, too, by selling the fossils from the Spiti shales as sacred objects.

Botany. The general features of the great variety in vegetation have been illustrated in the quotation from Mr. Freshfield's description of Sikkim. These variations are naturally due to an increase in elevation, and to the decrease in rainfall and humidity passing from south to north, and from east to west. The tropical zone of dense forest extends up to about 6,500 feet in the east, and 5,000 feet in the west. In the Eastern Himālayas orchids are numerically the predominant order of flowering plants; while in Kumaun about 62 species, both epiphytic and terrestrial, have been found. A temperate zone succeeds, ranging to about 12,000 feet, in which oaks, pines, and tree-rhododendrons are conspicuous, with chestnut, maple, magnolia, and laurel in the east. Where rain and mist are not excessive, as for example in Kulū and Kumaun, European fruit trees (apples, pears, apricots, and peaches) have been naturalized very successfully, and an important crop of potatoes is obtained in the west. Above about 12,000 feet the forests become thinner. Birch and willow mixed with dwarf rhododendrons continue for a time, till the open pasture land is reached, which is richly adorned in the summer months with brilliant Alpine species of flowers. Contrasting the western with the eastern section we find that the former is far less rich, though it has been better explored, while there is a preponderance of European species. A fuller account of the botanical features of the Himālayas will be found in Vol. I, chap. iv.

Fauna. To obtain a general idea of the fauna of the Himālayas it is sufficient to consider the whole system as divided into two tracts: namely, the area in the lower hills where forests can flourish, and the area above the forests. The main characteristics of these tracts have been summarized by the late Dr. W. T. Blanford[1]. In the forest area the fauna differs markedly from that of the Indian Peninsula stretching away

[1] 'The Distribution of Vertebrate Animals in India, Ceylon and Burma,' *Proceedings*, *Royal Society*, vol. lxvii, p. 484.

from the base of the hills. It does not contain the so-called Aryan element of mammals, birds, and reptiles which are related to Ethiopian and Holarctic genera, and to the pliocene Siwālik fauna, nor does it include the Dravidian element of reptiles and batrachians. On the other hand, it includes the following animals which do not occur in the Peninsula—Mammals: the families Simiidae, Procyonidae, Talpidae, and Spalacidae, and the sub-family Gymnurinae, besides numerous genera, such as *Prionodon*, *Helictis*, *Arctonyx*, *Atherura*, *Nemorhaedus*, and *Cemas*. Birds: the families Eurylaemidae, Indicatoridae, and Heliornithidae, and the sub-family Paradoxornithinae. Reptiles: Platysternidae and Anguidae. Batrachians: Dyscophidae, Hylidae, Pelobatidae, and Salamandridae. Compared with the Peninsula, the fauna of the forest area is poor in reptiles and batrachians.

'It also contains but few peculiar genera of mammals and birds, and almost all the peculiar types that do occur have Holarctic affinities. The Oriental element in the fauna is very richly represented in the Eastern Himālayas and gradually diminishes to the westward, until in Kashmīr and farther west it ceases to be the principal constituent. These facts are consistent with the theory that the Oriental constituent of the Himālayan fauna, or the greater portion of it, has migrated into the mountains from the eastward at a comparatively recent period. It is an important fact that this migration appears to have been from Assam and not from the Peninsula of India.'

Dr. Blanford suggested that the explanation was to be found in the conditions of the glacial epoch. When the spread of snow and ice took place, the tropical fauna, which may at that time have resembled more closely that of the Peninsula, was forced to retreat to the base of the mountains or perished. At such a time the refuge afforded by the Assam Valley and the hill ranges south of it, with their damp, sheltered, forest-clad valleys, would be more secure than the open plains of Northern India and the drier hills of the country south of these. As the cold epoch passed away, the Oriental fauna re-entered the Himālayas from the east.

Above the forests the Himālayas belong to the Tibetan sub-region of the Holarctic region, and the fauna differs from that of the Indo-Malay region, 44 per cent. of the genera recorded from the Tibetan tract not being found in the Indo-Malay region. During the glacial epoch the Holarctic forms apparently survived in great numbers.

Owing to the rugged nature of the country, which makes People.

travelling difficult and does not invite immigrants, the inhabitants of the Himālayas present a variety of ethnical types which can hardly be summarized briefly. Two common features extending over a large area may be referred to. From Ladākh in Kashmīr to Bhutān are found races of Indo-Chinese type, speaking dialects akin to Tibetan and professing Buddhism. In the west these features are confined to the higher ranges; but in Sikkim, Darjeeling, and Bhutān they are found much nearer the plains of India. Excluding Burma, this tract of the Himālayas is the only portion of India in which Buddhism is a living religion. As in Tibet, it is largely tinged by the older animistic beliefs of the people. Although the Muhammadans made various determined efforts to conquer the hills, they were generally unsuccessful, yielding rather to the difficulties of transport and climate than to the forces brought against them by the scanty though brave population of the hills. In the twelfth century a Tartar horde invaded Kashmīr, but succumbed to the rigours of the snowy passes. Subsequently a Tibetan soldier of fortune seized the supreme power and embraced Islām. Late in the fourteenth century the Muhammadan ruler of the country, Sultān Sikandar, pressed his religion by force on the people, and in the province of Kashmīr proper 94 per cent. of the total are now Muhammadans. Baltistān is also inhabited chiefly by Muhammadans, but the proportion is much less in Jammu, and beyond the Kashmīr State Islām has few followers. Hinduism becomes an important religion in Jammu, and is predominant in the southern portions of the Himālayas within the Punjab and the United Provinces. It is the religion of the ruling dynasty in Nepāl, where, however, Buddhism is of almost equal strength. East of Nepāl Hindus are few. Where Hinduism prevails, the language in common use, known as Pahāri, presents a strong likeness to the languages of Rājputāna, thus confirming the traditions of the higher classes that their ancestors migrated from the plains of India. In Nepāl the languages spoken are more varied, and Newāri, the ancient state language, is akin to Tibetan. The Mongolian element in the population is strongly marked in the east, but towards the west has been pushed back into the higher portion of the ranges. In Kumaun are found a few shy people living in the recesses of the jungles, and having little intercourse with their more civilized neighbours. Tribes which appear to be akin to these are found in Nepāl, but little is known about them. North of Assam the people are of Tibeto-Burman

origin, and are styled, passing from west to east, the Akās, Daflās, Mīris, and Abors, the last name signifying 'unknown savages.' Colonel Dalton has described these people in his *Ethnology of Bengal.*

From the commercial point of view the agricultural products of the Himālayas, with few exceptions, are of little importance. The chief food-grains cultivated are, in the outer ranges, rice, wheat, barley, *maruā*, and amaranth. In the hot, moist valleys, chillies, turmeric, and ginger are grown. At higher levels potatoes have become an important crop in Kumaun; and, as already mentioned, in Kulū and Kumaun European fruits have been successfully naturalized, including apples, pears, cherries, and strawberries. Two crops are obtained in the lower hills; but cultivation is attended by enormous difficulties, owing to the necessity of terracing and clearing land of stones, while irrigation is only practicable by long channels winding along the hill-sides from the nearest suitable stream or spring. As the snowy ranges are approached wheat and buckwheat, grown during the summer months, are the principal crops, and only one harvest in the year can be obtained. Tea gardens were successfully established in Kumaun during the first half of the nineteenth century, but the most important gardens are now situated in Kāngrā and Darjeeling. In the latter District cinchona is grown for the manufacture of quinine and cinchona febrifuge. Agriculture.

The most valuable forests are found in the Outer Himālayas, yielding a number of timber trees, among which may be mentioned *sāl*, *shīsham* (*Dalbergia Sissoo*), and *tūn* (*Cedrela toona*). Higher up are found the *deodār* and various kinds of pine, which are also extracted wherever means of transport can be devised. In the Eastern Himālayas wild rubber is collected by the hill tribes already mentioned, and brought for sale to the Districts of the Assam Valley. Forests.

Communications within the hills are naturally difficult. Railways have hitherto been constructed only to three places in the outer hills: Jammu in the Kashmīr State, Simla in the Punjab, and Darjeeling in Bengal. Owing to the steepness of the hill-sides and the instability of the strata composing them, these lines have been costly to build and maintain. A more ambitious project is now being carried out to connect the Kashmīr Valley with the plains, motive power being supplied by electricity to be generated by the Jhelum river. The principal road practicable for wheeled traffic is also in Kashmīr, leading from Rāwalpindi in the plains through Murree and Bāramūla Means of communication.

to Srīnagar. Other cart-roads have been made connecting with the plains the hill stations of Dharmsāla, Simla, Chakrāta, Mussoorie, Dalhousie, Nainī Tāl, and Rānīkhet. In the interior the roads are merely bridle paths. The great rivers flowing in deep gorges are crossed by suspension bridges made of the rudest materials. The sides consist of canes and twisted fibres, and the footway may be a single bamboo laid on horizontal canes supported by ropes attached to the sides. These frail constructions, oscillating from side to side under the tread of the traveller, are crossed with perfect confidence by the natives, even when bearing heavy loads. On the more frequented paths, such as the pilgrim road from Hardwār up the valley of the Ganges to the holy shrines of Badrināth and Kedārnāth, more substantial bridges have been constructed by Government, and the roads are regularly repaired. Sheep and, in the higher tracts, yaks and crosses between the yak and ordinary cattle are used as beasts of burden. The trade with Tibet is carried over lofty passes, the difficulties of which have not yet been ameliorated by engineers. Among these the following may be mentioned: the Kangwa La (15,500 feet) on the Hindustān-Tibet road through Simla; the Mānā (18,000 feet), Nitī (16,570 feet), and Balcha Dhurā in Garhwāl; the Anta Dhurā (17,270 feet), Lampiya Dhurā (18,000 feet), and Lipū Lekh (16,750) in Almorā; and the Jelep La (14,390) in Sikkim.

Bibliography.

[More detailed information about the various portions of the Himalāyas will be found in the articles on the political divisions referred to above. An admirable summary of the orography of the Himālayas is contained in Lieut.-Col. H. H. Godwin Austen's presidential address to the Geographical Section of the British Association in 1883 (*Proceedings, Royal Geographical Society*, 1883, p. 610; and 1884, pp. 83 and 112, with a map). Fuller accounts of the botany, geology, and fauna are given in E. F. Atkinson's *Gazetteer of the Himālayan Districts in the North-Western* [United] *Provinces*, 3 vols. (1882–6). See also General Strachey's 'Narrative of a Journey to Mānasarowar,' *Geographical Journal*, vol. xv, p. 150. More recent works are the *Kāngra District Gazetteer* (Lahore, 1899); C. A. Sherring, *Western Tibet and the British Borderland* (1906); and D. W. Freshfield, *Round Kangchenjunga* (1903), which contains a full bibliography for the Eastern Himālayas. An account of the Himālayas by officers of the Survey of India and the Geological department is under preparation.]

Siwālik Hills ('belonging to Siva').—A range of hills in Northern India, running parallel to the Himālayas for about 200 miles from the Beās to the Ganges; a similar formation east of the Ganges separates the Pātlī, Patkot, and Kotah Dūns (valleys) from the outer range of the Himālayas as far as Kālādhūngī, where it merges into them, and is believed to reappear still farther east in Nepāl. In the United Provinces the Siwāliks lie between the Jumna and Ganges, separating Sahāranpur District from Dehra Dūn, while in the Punjab they cross the Sirmūr (Nāhan) State and Ambāla and Hoshiārpur Districts. This part of the range is irregular and pierced by several rivers, of which the Ghaggar on the west is the largest. West of the Ghaggar the hills run like a wall, separating Ambāla from the long narrow valley of the Sirsa river in Nālāgarh State, until they are cut through by the Sutlej at Rūpar. Thence the range runs with a more northerly trend through Hoshiārpur, where it terminates near the Beās valley in a mass of undulating hills. Beyond the Sutlej there is merely a broad table-land, at first enclosed by sandy hillocks, but finally spreading into minor spurs. The southern face, in the United Provinces, rises abruptly from the plains and is scored by the bare stony beds of the watercourses which rush down in the rains. On the northern side is a more gentle descent into the elevated valley of Dehra Dūn, which separates this range from the Himālayas. The greatest height does not exceed 3,500 feet, and the range is about ten miles broad. A road from Sahāranpur to Dehra crosses these hills by the Mohan Pass, but has lost its importance since railway communication was opened through the eastern termination near the Ganges. Geologically, the Siwāliks are separated from the Outer Himālayas by a continuous reversed fault. They contain Tertiary strata consisting of fresh-water deposits, celebrated for the fossil remains found in them and described by Falconer and Cautley. The lower hills are thickly clothed with *sāl* (*Shorea robusta*) and *sain* (*Terminalia tomentosa*), while on the higher peaks a cooler climate allows pines to flourish. Wild elephants are found, and also tigers, sloth bears, leopards, hyenas, various kinds of deer, and hog. The term Siwālik has been applied by Muhammadan writers to the area lying south of the hills as far as Hānsi, and also to the Himālayas.

[Falconer and Cautley (*Fauna Antiqua Sivalensis*), London, 1846–9–66.]

Vindhya Hills (*Ouindion* of Ptolemy).—A range of hills separating the Gangetic basin from the Deccan, and forming Geographical ex-

tent and position. a well-marked chain across the centre of India. The name was formerly used in an indefinite manner to include the Sātpurā Hills south of the Narbadā, but is now restricted to the ranges north of that river. The Vindhyas do not form a range of hills in the proper geological sense of the term, that is, possessing a definite axis of elevation or lying along an anticlinal or synclinal ridge. The range to the north of the Narbadā, and its eastern continuation the Kaimur to the north of the Son valley, are merely the southern scarps of the plateau comprising the country known as Mālwā and Bundelkhand. The features of the Vindhyas are due to sub-aerial denudation, and the hills constitute a dividing line left undenuded between different drainage areas. From a geographical point of view, the Vindhyan range may be regarded as extending from Jobat (22° 27′ N. and 74° 35′ E.) in Gujarāt on the west to Sasarām (24° 57′ N. and 84° 2′ E.) in the south-western corner of Bihār on the east, with a total length of nearly 700 miles. Throughout the whole length as thus defined the range constitutes the southern escarpment of a plateau. The Rājmahāl Hills, extending from Sasarām to Rājmahāl and forming the northern escarpment of the Hazāribāgh highlands, cannot be correctly considered as a part of the Vindhyas.

Orographical features. The range commencing in Gujarāt crosses the Central India Agency from Jhābua State in the west, and defines the southern boundary of Saugor and Damoh Districts in the Central Provinces. From here the KAIMUR branch of the range runs through Baghelkhand or Rewah and the United Provinces into Bihār. The Kaimur Hills rise like a wall to the north of the Son valley, and north of them a succession of short parallel ridges and deep ravines extends for about 50 miles. At Amarkantak the Vindhyas touch the Sātpurā Hills at the source of the Narbadā. Westward from Jubbulpore District they form the northern boundary of the valley of that river. Their appearance here is very distinctive, presenting an almost uninterrupted series of headlands, with projecting promontories and receding bays, like a weather-beaten coast-line. In places the Narbadā washes the base of the rocks for miles, while elsewhere they recede and are seen from the river only as a far-off outline with the plains of Bhopāl or Indore spread out below them. The rocks are sandstone of a pinkish colour and lie in horizontal slabs, which commonly testify to their origin by curious ripple marks plainly formed by the lapping of water on a sandy shore. To the north of this escarpment lies the Bundelkhand or Mālwā plateau, with a length of about 250

miles and a width at its broadest part of about 225 miles. The plateau is undulating and is traversed by small ranges of hills, all of which are considered to belong to the Vindhyan system.

The most northerly of these minor ranges, called the Bindhāchal, cuts across Jhānsi, Bāndā, Allahābād, and Mirzāpur Districts in the United Provinces, nowhere rising above 2,000 feet. The range presents the appearance of a series of plateaux, each sloping gently upward from south to north, and ending abruptly in the steep scarp which is characteristic of these hills. Many outlying isolated hills are found in these Districts, standing out on the plains beyond the farthest scarp. One small hill, called Pabhosā, rises on the left bank of the Jumna, the only rock found in the Doāb. The Bhānrer or Pannā hills form the south-eastern face of the Vindhyan escarpment, and bound the south of Saugor and Damoh Districts and the north of Maihar State in continuation of the Kaimur, thus being a part of the main range. They run from north-west to south-east for about 120 miles. Their highest peak is that of Kalumar (2,544 feet). Two other branches of the range lie in Mālwā, starting respectively near Bhīlsa and Jhābua with a northerly direction, and bounding the plateau to the east and west. Outlying ranges.

The general elevation of the Vindhyan range is from 1,500 to 2,000 feet, and it contains a few peaks above 3,000, none of which is of any special importance. The range forms with the Sātpurās the watershed of the centre of India, containing the sources of the Chambal, Betwā, Sonār, Dhasān, and Ken rivers, besides others of less importance. The Son and Narbadā rise at Amarkantak, where the Vindhyan and Sātpurā ranges join. The rivers generally rise near the southern escarpment and flow north and north-east. Elevation and drainage.

Geologically, the hills are formed principally of great massive sandstones of varying consistency, alternating with softer flags and shales, the whole formation covering an area not greatly inferior to that of England. The range has given its name to the Vindhyan system of geological nomenclature. Over a great part of the Mālwā plateau the sandstone is covered by the overflowing Deccan trap, while from Ginnurgarh in Bhopāl to near Jobat the range itself is of basaltic formation, and the last 60 miles to the west from Jobat to near Jambhughorā consist of metamorphic rocks. In the north, the underlying gneiss is exposed in a great gulf-like expanse. Economically, the Vindhyan rocks are of considerable value, the sandstone Geological formation.

being an excellent building material which has been extensively used for centuries; the Buddhist topes of Sānchī and Bhārhut, the eleventh-century temples of Khajrāho, the fifteenth-century palaces of Gwalior, and numerous large forts at all important positions on the plateau having been constructed of this material. At Nāgod and other places limestone is found in some quantity, the pretty coralline variety, extracted from the Bāgh cretaceous beds, having been extensively employed in the palaces and tombs at Māndū; and at Pannā, in the conglomerate which underlies the shales, diamonds are met with, though none of any great value is known to have been extracted. Manganese, iron, and asbestos are also found in various parts of the range. The lofty flat-topped hills and bold scarps which are such a marked feature of this range were early recognized as ideal sites for fortresses; and, besides the historical strongholds of Gwalior, Narwar, Chanderī, Māndū, Ajaigarh, and Bāndhogarh, the hills are studded with the ruined castles of marauding Girāsiā and Bundelā chiefs.

Forests. The hills are generally covered with a stunted forest growth of the several species found in the dry forests of Central India. Teak occurs only in patches and is of small size, while the forests are generally noticeable for their poverty in valuable timbers.

Mythological associations. The term Vindhya in Sanskrit signifies 'a hunter'; and the range occupies a considerable place in the mythology of India, as the demarcating line between the Madhya Desa or 'middle land' of the Sanskrit invaders and the non-Aryan Deccan. The Vindhyas are personified in Sanskrit literature, where they appear as a jealous monarch, the rival of king Himālaya, who called upon the sun to revolve round his throne as he did round the peak Meru. When the sun refused, the mountain began to rear its head to obstruct that luminary, and to tower above Himālaya and Meru. The gods invoked the aid of Agastya, the spiritual guide of Vindhya. This sage called upon the Vindhya mountain to bow down before him, and afford him an easy passage to and from the South. It obeyed and Agastya passed over. But he never returned, and so the mountain remains to the present day in its humbled condition, far inferior to the Himālaya. Another legend is that when Lakshmana, the brother of Rāma, was wounded in Ceylon by the king of the demons, he wished for the leaves of a plant which grew in the Himālayas to apply them to his wound. Hanumān, the monkey-god, was sent to get it, and not knowing which plant it was, he took up a part of the Himālayas

and carried them to Ceylon. He happened to drop a portion of his load on the way, and from this the Vindhyan Hills were formed.

Kaimur Hills.—The eastern portion of the Vindhyan range, commencing near Katangī in the Jubbulpore District of the Central Provinces (23° 26′ N. and 79° 48′ E.). It runs a little north of east for more than 300 miles to Sasarām in Bihār (24° 57′ N. and 84° 2′ E.). The range, after traversing the north of Jubbulpore District and the south-east of Maihar State, turns to the east and runs through Rewah territory, separating the valleys of the Son and Tons rivers, and continues into Mirzāpur District of the United Provinces and Shāhābād of Bengal. Its maximum width is 50 miles. In the Central Provinces the appearance of the range is very distinctive. The rock formation is metamorphic and the strata have been upheaved into an almost vertical position, giving the range the appearance of a sharp ridge. In places the range almost disappears, being marked only by a low rocky chain, and in this portion it never rises more than a few hundred feet above the plain. The range enters Central India at Jukehi in Maihar State (23° 29′ N. and 80° 27′ E.), and runs for 150 miles in a north-easterly direction, forming the northern wall of the Son valley and overhanging the river in a long bold scarp of sandstone rock, from which near Govindgarh a branch turns off to the north-west. The range here attains an elevation of a little over 2,000 feet. In Mirzāpur the height of the range decreases in the centre, to rise again to over 2,000 feet at the rock of Bijaigarh with its ancient fort. Interesting relics of prehistoric man have been found in the caves and rock-shelters of the hills here, in the form of rude drawings and stone implements. In Shāhābād District the summits of the hills consist of a series of saucer-shaped valleys, each a few miles in diameter, containing a deposit of rich vegetable mould in the centre and producing the finest crops. The general height of the plateau is here 1,500 feet above sea-level. The sides are precipitous, but there are several passes, some of which are practicable for beasts of burden. The ruined fort of ROHTĀS is situated on these hills. The rocks throughout consist principally of sandstones and shales.

Sātpurās, East.—The eastern extension of the Sātpurā Hills of Central India, lying east and south of the Son. In the United Provinces they form a wilderness of parallel ridges of low rocky hills, extending over 1,700 square miles in the south of Mirzāpur, and covered with jungle, with the exception

of a large basin in *tappa* Singraulī and a smaller area in Dūdhī where the soil is alluvial and allows cultivation. Coal has been found in Singraulī, and an attempt was made in 1896 to work it. The few inhabitants are chiefly jungle tribes, Kols, &c., resembling those in Chotā Nāgpur.

Gohnā (*Gaunā*).—A lake of recent formation situated near the small village of the same name in the Garhwāl District of the United Provinces, in 30° 22′ N. and 79° 29′ E. Towards the end of the rains in 1893 two landslips took place on the right bank of the Birahī Gangā, a tributary of the Alaknandā (see GANGES). The side of a steep hill, towering 4,000 feet above the level of the stream, crashed down into the valley, hurling large blocks of limestone against the opposite cliff to the distance of a mile in places, and forming a dam more than two miles long at the base and one-third of a mile along the top, which completely blocked the valley to a height of 850 to 900 feet. It has been estimated that the dam contained 9 billion cubic feet of dolomite and detritus, weighing 8 hundred million tons. Special arrangements were successfully made to avoid the damage to life and property to be expected when the water should reach the top of this dam and commence to cut it away. The pilgrim road to the shrines in the Upper Himālayas lies close along the line of escape, and bridges were dismantled and diversions constructed. At Hardwār it was necessary to protect the head-works of the Ganges Canal. In December, 1893, the area of the lake was about one square mile and its depth 450 feet. By July, 1894, the lake had become a large sheet of water, nearly 4 miles long and half a mile broad, and the level of the water had risen nearly 170 feet, while percolation was freely taking place. A month later the water was rising about 4 feet a day, and on the morning of August 25th water began to trickle over the dam, which was rapidly cut away. It was found next day that the level of the lake had fallen 390 feet, leaving a stretch of water 3,900 yards long with an average breadth of 400 yards. The depth near the dam was 300 feet, and the bed had already silted up about 85 feet. Immediately below the dam the flood rose 280 feet, but its height rapidly decreased as the channels of the rivers which carried it off widened. At Rudraprayāg, 51 miles away, the rise was 140 feet; at Beāsghāt, 99 miles, 88 feet; and at Hardwār, 149 miles, only 11 or 12 feet. The total damage caused to public property was valued at more than Rs. 95,000, but no lives were lost except those of five persons who insisted on remaining just below the dam. At Hardwār

the head-works of the Ganges Canal were slightly damaged, but beyond this point the flood had no appreciable effect. The outlet of the lake now appears to have a stable bed.

[*Selections from Records, Government of India, Public Works Department, No. CCCXXIV.*]

Dāhar Lake.—A picturesque sheet of water near Sāndī in the Hardoī District of Oudh, with fine mango groves on its banks and lotus leaves floating on its waters, situated in 27° 19′ N. and 70° 58′ E. It is about two miles long and three-quarters of a mile wide. Fish abound in it, and in the cold season water-fowl are plentiful. The depression in which this lake is situated was probably part of an old bed of the Rāmgangā, which now flows some distance to the west.

Bakhira Tāl (also called Badānch Tāl or Motī Jhīl).—A lake on the eastern border of Bastī District, in the United Provinces. Buchanan described it as the finest piece of fresh water he had seen in India. It covers a space of about 5 miles by 2, but is merely a shallow depression filled with water, the depth of which rarely exceeds 4 or 5 feet. On the west and south the fringe of marsh is small, but on the north a tract, which is regularly flooded in the rains, extends for 3 miles. To the east a low fen stretches for about 2 miles to the edge of the Rāptī. The water in the lake is largely supplied by floods from this river, and would escape again but for an embankment along the eastern side. Fish are plentiful, and are caught in screens at the outlets of the dam or speared with a thin piece of bamboo tipped with iron. In the cold season the surface of the water is covered with wild-fowl. *Boro* or summer rice is largely planted in February or March round the edges of the lake.

Surahā Tāl.—A lake in Balliā District of the United Provinces, 4 miles north of Balliā town, situated in 25° 51′ N. and 84° 11′ E. Its shape is that of a thick crescent lying north and south, and its area varies from 13 square miles in the rains to over 4 during the dry season. *Boro* or summer rice is largely sown in the spring round the edge, and in the deeper parts of the lake the weed *siwār*, which is used for refining sugar, grows largely. Fish are plentiful and are caught by sinking nets stretched on conical frameworks, the fish being speared as they try to escape. In the cold season teal and duck are common. The lake is drained by a channel called Katihār, which leads south to the Ganges; but when the Ganges rises, its waters flow back into the lake. In the cold season the Katihār is temporarily dammed to hold up

sufficient water for irrigation of the crops on the banks of the lake.

Ganges Canal, Upper.—The largest and most important irrigation work in the United Provinces, taking off from the right bank of the GANGES river and watering the Upper Doāb. Two miles above Hardwār the Ganges divides into several channels, the most westerly of which contains a large volume of water and, after passing Hardwār, rejoins the main stream at Kankhal. This channel is held up by a temporary dam which diverts the water into the canal head-works, where the amount admitted is regulated at the Māyāpur bridge. During the first 20 miles of its course four large torrents liable to sudden floods of extreme violence have to be crossed. Two of these are carried over the canal, the third is passed through it by a level crossing provided with flood-gates, and the canal itself flows on a magnificent aqueduct over the bed of the SOLĀNI. At mile 22 the canal throws off the Deoband branch (52 miles long); at mile 50 the Anūpshahr branch (107 miles); and at mile 181 (at Nānū in Alīgarh District) it divides into what were originally called the Cawnpore and Etāwah branches of the Ganges Canal. The LOWER GANGES CANAL now crosses these in their 32nd and 39th miles respectively, and from the points of junction they are considered to belong to it. The Upper Ganges Canal, on March 31, 1904, had 213 miles of main line, 227 miles of branches, and 2,694 miles of distributaries.

In 1827 Captain De Bude proposed a scheme for utilizing the waters of the West Kālī Nadī, along a drainage line constructed under native rule, to irrigate Meerut, Bulandshahr, and Alīgarh Districts. The supply would, however, have been deficient and uncertain, and in 1836, at the suggestion of Colonel Colvin, the Ganges was examined near Hardwār. The next year a terrible famine, which devastated the Doāb, increased the anxiety of Government to provide a satisfactory scheme. Major (afterwards Sir) Proby Cautley commenced a survey in 1839, and prepared a project which was warmly approved by the Court of Directors in 1841, the estimated cost being over a million sterling. In April, 1842, the actual works were commenced by opening the excavation between Kankhal and Hardwār. The work had, however, hardly begun when Lord Ellenborough abruptly stopped it, on the grounds that money could not be spared and that the project was unsound from an engineering point of view. Subsequently the totally inadequate grant of 2 lakhs a year was made. In 1844

Mr. Thomason, shortly after assuming office as Lieutenant-Governor, made a strong representation on the subject, and was informed that the main object of the canal was to be navigation, not irrigation. The grant was, however, increased by a lakh a year, and surveys were pressed on. A committee considered the arguments raised, and in 1847 reported favourably on the scheme. Lord Hardinge visited the head-works in the same year, and reversed the decision of his predecessor: an annual grant of 20 lakhs a year was sanctioned, with a promise of more if it could be usefully spent. The revised estimate of 1½ million sterling was passed by the Directors in 1850, and the canal was opened in April, 1854. The works were, however, not complete; in particular, those at the Solāni river gave way, and irrigation really commenced from May, 1855. Although the canal had been extraordinarily successful, owing to the genius of its projector, Sir Proby Cautley, ten years' experience pointed out defects in the system, and in 1866 a committee sat to examine the proposals which had been made. The result of their report was the expenditure of large sums on improvements and remodelling, the chief objects of which were to increase the supply, and to reduce the excessive slope of the channel by providing more falls. They also recommended a site near Rājghāt in Alīgarh as a point from which a supplementary supply might be drawn, and this was carried out later in the Lower Ganges Canal.

The expenditure on capital account up to 1904 has been about 3 crores (£2,000,000 at present rate of exchange). The total area commanded by the canal at the end of 1903-4 was 3,800,000 acres in the Districts of Saharanpur, Muzaffarnagar, Meerut, Bulandshahr, Alīgarh, Muttra, Agra, Etah, and Mainpurī, of which 978,000 acres were irrigated. There is not much room for further increase. The canal also supplements the supply available in the LOWER GANGES and AGRA CANALS (by means of the Hindan cut). The gross revenue first exceeded the working expenses in 1860-1. The net revenue has been larger than the interest charges on the capital expended since 1873-4. The most successful year of working was 1900-1, when the net revenue amounted to 11½ per cent. on the capital outlay. In 1903-4 the gross and net revenue amounted respectively to 42 and 31 lakhs, the latter representing 10·3 per cent. on the capital outlay.

Special expenditure has been undertaken to facilitate navigation by constructing locked channels round falls, and by raising bridges; and boats can pass from Roorkee to Cawnpore. The

portion of the Cawnpore branch from Nānū to Gopālpur, where it meets the Lower Ganges Canal, is kept open chiefly for navigation; and both the Ganges Canals are, in this respect, considered a single system. Operations are carried on at a loss; the receipts in 1903–4 were Rs. 11,000, while the expenditure was Rs. 19,000. Grain, cotton, oilseeds, and timber are the most important commodities carried; the rafting of timber is, however, decreasing. A small income is derived from mills worked by water-power at the falls, and the water-supply of Meerut city is raised by turbines worked by the canal.

Ganges Canal, Lower.—An important irrigation work designed to water the southern and eastern portion of the Doāb in the United Provinces. The canal owes its origin to the recommendations of the committee appointed in 1866 to examine the various projects for improving the Upper Ganges Canal. It takes off from the Ganges at Naraura in Alīgarh District, where a solid wall 3,800 feet long, with a section of 10 feet by 9, having forty-two weir-sluices, has been thrown across the river. At mile 25 the Fatehgarh branch, 61 miles long, is given off, and soon after, at mile 34, the canal is carried on a fine aqueduct across the Kālī Nadī at Nadrai. The Bewar branch, 65 miles long, takes off 6 miles lower down, and at mile 55 the main canal meets the old Cawnpore branch of the Upper Ganges Canal at Gopālpur, and provides most of its supply. It then passes on to the Etāwah branch of the Upper Ganges Canal and supplies it also, the main channel taking the name of the Bhognīpur branch and terminating in Cawnpore District. The canal was first opened for irrigation in 1878; in 1895 the Fatehpur branch, which is a continuation of the Cawnpore branch, extending into Allahābād District, was commenced, and it was opened for irrigation in 1898. The total capital outlay on this canal to the end of 1903–4 was more than 4 crores. The system commands an area of 5,300,000 acres in the Districts of Etah, Mainpurī, Farrukhābād, Etāwah, Cawnpore, Fatehpur, and Allahābād, of which 831,000 acres were irrigated in 1903–4. The gross revenue has exceeded the working expenses since 1880–1, but the net revenue still falls, in some years, below the interest charges. In 1903–4 the canal earned 28 lakhs gross and 15 lakhs net, giving a return of 3·8 per cent. on the capital outlay. The main channel of 62 miles and 137 miles of branches are navigable. Navigation accounts are kept jointly with those of the Upper Ganges Canal.

Jumna Canal, Eastern.—An important irrigation work in

the Upper DOĀB of the United Provinces, taking off from the left or eastern bank of the Jumna. The canal is drawn from a branch of the river which divides soon after piercing the Siwāliks. The bed at this point has a rapid slope over boulders and shingle, and the supply is easily maintained by spurs. For some miles the canal itself flows over a similar bed. The main channel is 129 miles long, and there are 729 miles of distributaries and 447 of drains. Immediately after British occupation of the Doāb, recurring famines pointed to the urgent necessity for irrigation, and surveys commenced in 1809, but work was not begun till 1823. Funds were limited, and the canal was first opened in January, 1830. Sir Proby Cautley's experience on this canal was of great assistance in carrying out the magnificent works of the more important Upper Ganges Canal. The line followed kept closely to that of an old canal of the seventeenth century. It has been much improved since it was opened, by providing falls (which also supply power for flour-mills) to lessen the slope, and by straightening the channel.

The capital cost at the end of 1830–1 amounted to little more than 4 lakhs, which had increased to 46 lakhs by the end of 1903–4. The canal serves a rich tract in the Districts of Sahāranpur, Muzaffarnagar, and Meerut, lying between the Hindan and Jumna, and falls into the latter river a little below Delhi. It commands an area of 906,000 acres, and in 1903–4 irrigated 305,000 acres. The gross revenue has exceeded working expenses in every year except during the Mutiny; and the net profits are usually high, amounting to 9·9 lakhs or 22 per cent. on the capital outlay in 1903–4, while the gross profits were 14·5 lakhs. Since 1837–8 the canal has not been used for navigation.

Agra Canal.—An important irrigation work in Northern India, which receives its supply from the right bank of the Jumna at Okhla, about 11 miles below Delhi. It protects a tract of country which suffered considerably in the past from famine. The weir across the Jumna was the first attempted in Upper India on a river having a bed of the finest sand; it is about 800 yards wide, and rises 7 feet above the summer level of the river. In 1877 a cut was made from the HINDAN river to the left bank of the Jumna close to the weir; and water from the Ganges Canal can thus be used, when available, to supplement the supply in the Jumna, which sometimes falls short. The total length of the main canal in 1904 was 100 miles; of branches, 9 miles; of distributaries, 633 miles; of drainage cuts, 191 miles; and of other channels, 57 miles. The main

channel was completed in 1874, and irrigation commenced for the spring harvest of 1875. The total capital outlay to 1904 was 102 lakhs. The canal commands an area of 597,000 acres, of which about 8,000 acres are situated in the Delhi and 210,000 in the Gurgaon District of the Punjab, and 228,000 acres in the Muttra and 151,000 in the Agra District of the United Provinces. The total area actually irrigated in 1903–4 was 260,000 acres; the gross and net revenues were 8·4 and 5·6 lakhs, and the net revenue amounted to 5·5 per cent. on the capital outlay. The gross revenue has exceeded the working expenses in every year since 1876–7, and the net revenue has been larger than the interest charges on capital since 1896–7; but taking the whole period of existence of the canal, the interest charges have exceeded the net revenue by nearly 14 lakhs. The total length open for navigation was 125 miles, including two branches to the Jumna at Muttra and Agra, 9 and 16 miles in length, which cost 1·8 and 4·9 lakhs respectively, and were made especially for this purpose. The traffic is, however, small, and in 1903–4 only 14,221 tons of goods, valued at Rs. 90,000, were carried. The navigation receipts were Rs. 1,600, and the expenditure was Rs. 6,500. Navigation was finally stopped in 1904, as it interfered with irrigation, which is the prime object of the canal.

Agra Province.—The *Sūbah* or province of Agra was one of twelve into which the Mughal empire was originally divided by Akbar. It took its name from AGRA CITY, the imperial capital, and both city and province were subsequently called Akbarābād. The *Sūbah* is described in the *Ain-i-Akbarī* as 175 *kos* long from Palwal (now in Gurgaon District) to Ghātampur (Cawnpore District), and 100 *kos* broad from Kanauj (Farrukhābād District) to Chanderī (Gwalior State). It thus included, in the present United Provinces, the whole of the Agra Division, with Alīgarh and half Bulandshahr District to the north, and most of Cawnpore, Jālaun, and Jhānsi District to the east and south. On the west it extended over parts of the present States of Jaipur, Alwar, Bharatpur, Karauli, and Dholpur in Rājputāna, and Gwalior in Central India. The province nominally survived till the end of the eighteenth century, though Rājputs, Jāts, Marāthās, and the Pathāns of Farrukhābād had been the actual rulers for nearly a hundred years. The eastern portion, which is now British territory, was acquired, partly by cession from the Nawāb of Oudh in 1801, and partly by conquest from the Marāthās in 1803, and was at first included, with other areas acquired at the same periods, in

the Presidency of Bengal. Administrative difficulties arose, owing to the distance of these outlying tracts from the seat of Government at Calcutta; and after various temporary measures a Board of Revenue and a Sadr Dīwāni and Nizāmat Adālat (Chief Civil and Criminal Courts) were constituted in 1831 for the so-called Western Provinces, entirely independent of the Board and Courts at Calcutta. A few years later a Presidency of Agra was formed by the statute 3 and 4 William IV, cap. 85, which comprised the whole of the present UNITED PROVINCES, except Oudh and parts of Bundelkhand, and a Governor was appointed. The scheme was, however, never completely carried out; and a Lieutenant-Governor of the North-Western Provinces, which included the same area, was appointed in 1836 under the statute 5 and 6 William IV, cap. 52. By Act VII of 1902 a change was made in designation, and the North-Western Provinces and Oudh became the United Provinces of Agra and Oudh. The term 'Agra' is now applied (section 4 (4), United Provinces Act I of 1904) to the territories formerly known as the North-Western Provinces.

Baiswārā.—The name given to several tracts of country in various parts of the United Provinces, from the fact that they belong or have belonged to the Bais Rājputs. The most important of these includes a number of *parganas* (traditionally twenty-two) in the eastern half of Unao District, the western half of Rāe Barelī, and the extreme south of Lucknow, with a total area of nearly 2,000 square miles. The Bais Rājputs first became of importance here in the thirteenth century, when two of them, named Abhai Chand and Nirbhe Chand (who are supposed to have come from Mungī Pātan in the Deccan), rescued the Gautam Rānī of Argal, who had been attacked by the Muhammadan governor of Oudh. Nirbhe Chand died of his wounds, and the Rājā of Argal gave his daughter to Abhai Chand, who settled at Daundiā Khera. Tenth in descent from him was Tilok Chand, who lived about 1400, and extended the area held by the Bais to the limits described above. Legends are numerous about Tilok Chand, who became the greatest noble in Oudh, and opposed the Muhammadans, as did his immediate successors. According to one account, he defeated the Chauhān Rājā of Mainpurī, who thereupon gave him a daughter to wife, though the Bais were reckoned inferior to the Chauhāns. In the eighteenth century the bravery of the chiefs of Baiswārā gained the admiration of Saādat Khān, the founder of the Lucknow dynasty. Under the Nawābs Baiswārā formed a separate administrative division,

as described above. The Baiswārā Division formed by the British Government after annexation consisted of Rāe Barelī, Partābgarh, and Sultānpur, the last two Districts having nothing to do with the real Baiswārā. The tract has given its name to a dialect of Eastern Hindī, which differs very slightly from other dialects of that language. Its inhabitants still bear a reputation for bravery. The Bais chieftain, Drigbijai Singh, in 1857, saved the four survivors of the Cawnpore massacre from their pursuers.

[Elliott, *Chronicles of Oonao*, p. 66 et seq.]

Bundelkhand (British).—A tract of country in the United Provinces, which includes the Districts of JĀLAUN, JHĀNSI, HAMĪRPUR, and BĀNDĀ, with those parts of ALLAHĀBĀD which lie south of the Jumna and Ganges. It thus consists of an area of about 11,600 square miles, lying south-west of the Jumna from its junction with the Chambal. The name is taken from that of the Bundelā Thākurs, the most important clan inhabiting it. The word Bundelā is popularly derived from *būnd*, 'a drop,' in allusion to the attempted sacrifice of himself by the founder of the clan, a Gaharwār. His son was born from the drops of blood which fell on the altar of Vindhyabāsinī Devī at Bindhāchal (see MIRZĀPUR CITY). Other derivations are from Vindhya, or from *bāndi*, 'a slave-girl.'

Physical features.

The northern range of the Eastern Vindhyas called Bindhāchal cuts across the south of Jhānsi, Bāndā, and Allahābād, with many outlying hills, but nowhere rises above 2,000 feet. The base of the hills rests on gneiss, while the hills themselves are of sandstone, overlaid south of these Provinces by basalt, the Deccan trap, which has also spread north in dikes. From the hills numerous streams flow north or north-east towards the Jumna, of which the most important are the BETWĀ, DHASĀN, Birmā, KEN, Bāghain, Paisuni, and (Southern) TONS. The geological formation of Southern Bundelkhand has greatly influenced the soil of the alluvial plain lying between the hills and the Jumna. This contains a large proportion of disintegrated trap, which gives it a dark colour; it is especially adapted for growing wheat, and is known as 'black soil,' and in the vernacular as *mār*. A variety of lighter colour and differing qualities is known as *kābar*. From Jhānsi to Lalitpur a soil called *rākar* is found, the prevailing colour of which is largely red or yellow, owing to the presence of iron in the disintegrated gneiss. Another soil of red colour is formed from disintegrated sandstone *in situ*, and though productive is easily exhausted,

as it is very shallow. Black soil is retentive of moisture, but requires irrigation in unfavourable seasons, and in dry weather opens out in large cracks. During the rains unmetalled roads are almost impassable owing to the tenacious mud formed on them. A native proverb says that *kābar* is too wet to plough one morning, and too dry and hard to plough the next day.

In Bāndā, as in other tracts crossed by the Vindhyas, many varieties of stone implements have been found, the relics of prehistoric man[1]. The earliest traditions connected with British Bundelkhand relate that it was ruled over by Gaharwār Rājputs. Nothing certain is known of these; but some of the numerous tanks formed by throwing embankments across the narrow ends of valleys are attributed to them, namely, those where the embankments are formed of uncut stone. The largest is the Bijainagar lake, situated about three miles east of Mahobā. According to tradition the Gaharwārs were followed by Parihārs, who were in turn succeeded by Chandels, a clan which has left many memorials of its rule. Nothing but the name is known of Nānika or Nannuka, described in several inscriptions as the founder of the dynasty; but he probably flourished in the first half of the ninth century A.D. The fourth Rājā, Rāhila (*circa* 890–910), seems to have extended his dominions, and he constructed the Rāhilya Sāgar ('lake') at Mahobā, with a fine temple, now in ruins, on its embankment. The earliest dated inscriptions are those of Dhanga (950–99), who appears to have been the most powerful of the early Chandels. He assisted Jaipāl of Lahore in his unsuccessful invasion of the Ghazni kingdom in 978, and according to his inscriptions was recognized as overlord by the rulers of most of Central, Southern, and Eastern India; but this is clearly an exaggeration. His successor, Ganda (999–1025), who appears as Nanda Rai in the Muhammadan histories, also assisted Jaipāl of Lahore against Mahmūd of Ghazni; and according to Firishta he killed the king of Kanauj in 1021, but surrendered to Mahmūd in 1023, when he was in possession of fourteen forts. Kīrtti Varmma I, the eleventh king (1049–1100), seems to have been reigning when his son, Sallakshana, conquered Karna, king of Chedi or Southern Kosala. He is also the earliest Chandel whose coins, copied from those of the Chedi kings, are known. Tradition assigns to him the construction of the Kīrat Sāgar at

History.

[1] J. Rivett-Carnac, *J.A.S.B.*, 1883, p. 221, and J. Cockburn, ibid., 1894, pt. iii, p. 21.

Mahobā, and some buildings at Ajaigarh. Madan Varmma, the fifteenth king (1130–65), was a vigorous ruler, who extended the sway of the Chandels. He again subdued the Chedi kingdom, which had become independent, and is said to have conquered Gujarāt. His immediate successor, Paramārdī Deva or Parmāl (1165–1203), is still remembered, as during his reign Prithwī Rāj of Delhi conquered Bundelkhand in 1182, and the Chandel power received a second blow in 1203, when Kutb-ud-dīn raided the country. Popular tradition holds that Paramārdī lost his kingdom through disobeying the four conditions laid on the founder of the race—not to drink wine, not to put Brāhmans to death, not to form improper marriage connexions, and to preserve the name of Varmma. The Chandel dominion lay between the Dhasān on the west, the sources of the Ken on the south, the Jumna on the north, and the Vindhya Hills on the east. At times it extended as far west as the Betwā. Kālinjar, Khajrāho, Mahobā, and Ajaigarh were its great fortresses. In inscriptions the country is sometimes called Jejāka-bhukti, which has been contracted into Jijhoti, from which the Jijhotia Brāhmans, who still inhabit the tract, take their name. The kingdom of Chi-ki-to, described by Hiuen Tsiang in the seventh century as lying north-east of Ujjain, has been identified with Jejāka.

After the Musalmān conquest the Chandels became petty Rājās. The country was held for a short time by Mewātīs, probably in the first half of the thirteenth century, and then by Bhars. Tradition shows the latter as owning a large part of the Eastern Doāb and Central Oudh, and the Persian historians record the conquest by Ulugh Khān, in 1248, of a king Dalakī-wa-Malakī, reigning from Karā to Kālinjar. The name appears to be a compound of two names, Dal and Bal, which are known from tradition. The Bhars are locally said to have been driven out by a Muhammadan, and replaced by the Khangārs, formerly servants of the Chandels.

The Bundelās.

The Bundelās claim to be descended from Pancham, a Gaharwār who attempted to sacrifice himself, as noted above; but their real origin is obscure. They probably began to acquire power in the fourteenth century, first settling at a place called Mau, which has not been definitely identified, and then taking Kālinjar and Kālpī; but some writers place them a century earlier. As their power increased, chiefly in western Bundelkhand (Central India), the Bundelās constantly came into collision with the Muhammadans. About 1507

Rudra Pratāp became chief, and is said to have been formally appointed governor by Bābar. From his sons most of the great Bundelā families derive their descent. In 1545 Sher Shāh invaded Bundelkhand, and lost his life while besieging Kālinjar. Kīrat Singh, the last Chandel Rājā, was put to death by Islām Shāh, who took the fort; but it again fell into the hands of the Bundelās, till in 1569 Akbar got possession of it. The Bundelās, who were now divided, still held considerable power and were often successful in resisting the royal troops. Bīr Singh Deo, who ruled at Orchhā, and commenced the fort at Jhānsi, incurred the special anger of Akbar by planning the murder of Abul Fazl at the instigation of prince Salīm, afterwards the emperor Jahāngīr; and though he remained in favour during the reign of the latter, he rebelled against Shāh Jahān, and his territory was confiscated. The central part of Bundelkhand was ruled by Champat Rai from Mahobā. He joined in Bīr Singh Deo's revolt, and though attacked by forces from Agra, from Allahābād, and from the Deccan, maintained a guerrilla warfare near the Betwā. He finally accepted service under the emperor and obtained the *pargana* of Kūnch in Jālaun, and, in return for assistance given to Aurangzeb at the battle of Sāmogarh, received further grants, but lost favour and was assassinated by his wife's relations. Champat Rai's son, Chhatarsāl, soon became chief leader of the Bundelās, and in a few years held the whole of western Bundelkhand, and gradually extended his power, taking Kālinjar and most of what is now British Bundelkhand. He defeated the imperial troops again and again, and in 1707, on the accession of Bahādur Shāh, was confirmed in all the acquisitions he had made. In 1723 Muhammad Khān Bangash of Farrukhābād, while governor of Mālwā, was ordered to bring the Bundelās to order; and in 1727, after his transfer to Allahābād, he attacked them again, laying waste the whole country. Unable to resist the invasion, Chhatarsāl called in the Marāthās in 1729, and Muhammad Khān barely escaped with his life, glad to promise never to enter Bundelkhand again. When Chhatarsāl died, about 1734, he bequeathed one-third of his territory (Jhānsi and Jālaun) to the Marāthās, and the rest was divided among his heirs. Bundelkhand was valuable to the Marāthās, as it lay on the road from the Deccan to the Doāb, and the Peshwā Bājī Rao made constant use of it, the Bundelās binding themselves by treaty to co-operate with him. In 1747 the Peshwā further extended his possessions in this region by a fresh treaty, and

nearly twenty years later troops from here assisted Shujā-ud-daula of Oudh in his unsuccessful struggle with the English. British troops first entered Bundelkhand in 1776, when war broke out with the Marāthās after the Treaty of Purandhar, but they passed through without retaining any hold on the country. The Bundelās then succeeded in freeing themselves to some extent from the Marāthā power. A Gosain or religious mendicant named Himmat Bahādur, who had already commanded troops, now began to rise into power; and he combined with Alī Bahādur, an illegitimate grandson of Bājī Rao, who was in command at Gwalior, to crush the Bundelā chiefs. A long struggle took place between 1790 and 1802, when Alī Bahādur died while attempting to take Kālinjar. By the Treaty of Bassein in 1802 the Peshwā ceded territory to the British, some of which was afterwards exchanged for part of the Marāthā possessions in Bundelkhand. Another portion of these possessions was acquired under a later treaty. The subordinate Marāthā chiefs, however, refused to recognize these treaties; and Shamsher Bahādur, son of Alī Bahādur, proceeded to lay waste Bundelkhand and the British Districts of Mirzāpur and Benares. Himmat Bahādur then abandoned the Marāthās and came over to the British, who granted him a large tract along the Jumna between Allahābād and Kālpī. British troops co-operated with Himmat Bahādur and drove Shamsher Bahādur across the Betwā, and in 1803 took Kālpī. Shamsher Bahādur became titular Nawāb of Bāndā with a pension of four lakhs, and by the end of 1804 the country was fairly quiet. The fort of Kālinjar was taken in 1812. Subsequent additions to British territories took place by lapse, and Jhānsi city was finally acquired from Sindhia in exchange for Gwalior fort and Morār in 1886.

Population. The population of British Bundelkhand fell from 2,693,000 in 1891 to 2,456,000 in 1901, a decrease of nearly 9 per cent. Excessive rainfall and cloudy weather in the early years of the decade brought on rust, which damaged the spring crops and caused great loss to the people. The failure of the rains in 1895 and 1896 resulted in severe famine, and a virulent cholera epidemic broke out. The density is only 212 persons per square mile, being less than one-half the density in the United Provinces generally. Of the total population, 2,297,000, or more than 93 per cent., are Hindus, and only 143,000, or less than 6 per cent., are Muhammadans, who form 14 per cent. of the population in the United Provinces as a whole. British Bundelkhand extends to the jungles of Central India, and its

inhabitants have a strong infusion of Dravidian blood. The principal jungle tribes are the Kols, Khangārs, and Sahariās, who have become nominally Hinduized. The change is, however, more noticeable in regard to social customs, such as marriage rules, than in religious beliefs, which continue strongly animistic. A few estates are still owned by Marāthās, but the effects of their rule have almost disappeared. In Bāndā and Allahābād the Baghelī and Awadhī dialects of Eastern Hindī are spoken, while in Hamīrpur, Jhānsi, and Jālaun the vernacular is the Bundelī dialect of Western Hindī.

Agriculture. While in the United Provinces, as a whole, the autumn crops cover an area only about 16 per cent. greater than the spring crops, in Bundelkhand they are nearly double. About one-third of the autumn crop is *jowār* and one-seventh cotton, and from 50 to 80 per cent. of the spring crop is gram. These proportions vary according to the seasons, and after good rain the *rabi* area is largely increased. Irrigation from wells is difficult owing to the low spring-level, and the storage tanks made by closing valleys do not command large areas. There is only one canal, drawn from the Betwā, a protective work which chiefly serves Jālaun. In 1903–4, only about 4 per cent. of the cultivated area was irrigated, compared with one-third for the United Provinces as a whole. Bundelkhand is thus peculiarly liable to suffer from deficient rainfall. A canal from the Ken to serve Bāndā District has been commenced; and schemes to increase the water available in the Betwā Canal, which is at present insufficient for the demand, and to open other sources are under consideration. Other calamities are the prevalence of rust after a wet or cloudy winter, and the growth of a weed or grass called *kāns*, which spreads rapidly and can only be eradicated with difficulty. Famine has thus been severely felt again and again; and the failure of the rains in 1896, which followed successive bad years, was especially disastrous.

Special legislation. The liability to good and bad cycles of agricultural conditions is coupled with peculiarities in the nature and disposition of the people. Though perhaps not more extravagant than the inhabitants of the rest of the United Provinces, they are distinctly less provident; and the careful cultivation and saving habits of the Jāts, Kurmīs, Kāchhīs, Muraos, and Koirīs of other Districts are not found in Bundelkhand. This may be traced partly to the liability to vicissitudes already referred to, and partly to the effects of the revenue system of the Marāthās, who possessed the tract before the British. The most common

method was to assess a village annually at fixed rates on soil or crops, and to make deductions for bad seasons, after a valuation of the crops of each holding. This was a system of rack-renting, as the rates were the highest which could be paid in a good season, and it is obviously not a system under which either the standard of comfort or the prosperity of a community would be likely to increase. Except in part of the Lalitpur *tahsīl* of Jhānsi, the land was chiefly held by individual cultivators, and *talukdārs* or large holders of land were few. British rule conferred proprietary rights on the village headmen who were found managing land and collecting rents, and on a few relations of these who shared in the headman's special holding or reduced rent. Instead of the demand being regulated by the season, a rigid system of collecting a fixed amount was introduced; land became a transferable security, and the owners, unaccustomed to their new conditions, got freely into debt, and lost their holdings. It was estimated that in Bāndā, most of which became British territory early in the nineteenth century, an aggregate equal to twice or thrice the area of the District changed hands during the next forty years. Most of Jhānsi District was acquired later, when more experience had been gained in revenue administration, and sale of land was not allowed till 1862; but even here sufficient allowances were not made. Some landowners had been in debt since the Marāthā rule. After the Mutiny, revenue was collected from many from whom it had already been extorted by the Orchhā or Jhānsi rebels. In 1867 the crops failed, and in 1868-9 there was famine and great loss of cattle. In 1872 many cattle were lost from murrain. Although the settlement had appeared light, it became necessary to re-examine the condition of the District in 1876. After much discussion the Jhānsi Encumbered Estates Act (XVI of 1882) was passed, and a Special Judge was empowered to examine claims and reduce excessive interest. The sale of a whole estate operated as a discharge in bankruptcy to extinguish all debt due. Many estates were cleared by the sale of a portion only. A striking feature of the proceedings was the rapid increase in the value of land.

The experiment, though apparently successful, had no lasting effect. Bundelkhand suffered from another series of bad years, commencing with rust and blight in 1892-3, excessive rain in 1894, and drought in 1895 and 1896. Even in Bāndā, where the last settlement was made, not on actual 'assets,' but on a fair average area of cultivation, the population decreased by

10½ per cent. between 1891 and 1901. Debt had become serious in all parts of the tract. The Jhānsi legislation has therefore been revived, with modifications suggested by the experience gained, in (United Provinces) Act I of 1903, which has been applied to the whole of British Bundelkhand. In addition to this, two new safeguards have been adopted. By (United Provinces) Act II of 1903 permanent alienations of land are forbidden where the alienor is a member of one of certain agricultural tribes, except in favour of another member of the same tribe, or where both parties reside in the same District and are both members of agricultural tribes. Except where permanent alienation is allowed, mortgages and leases are subject to the condition that possession of the land involved cannot be transferred for more than twenty years. Sales in execution of decrees passed by civil or revenue courts (other than those of the Special Judges who have been appointed) are forbidden, but such decrees may be liquidated by usufructuary mortgages for terms not exceeding twenty years. Large reductions of revenue have been made, and the assessment of all parts of Bundelkhand is being revised. The new demand, instead of being fixed for thirty years, will be liable to further revision whenever the cultivated area fluctuates considerably.

[V. A. Smith, 'History of Bundelkhand,' *Journal, As. Soc., Bengal* (1881), p. 1; A. Cunningham, *Arch. Survey Reports*, vols. vii and xxi; C. A. Silberrad, *Journal, As. Soc., Bengal* (1902), p. 99; E. G. Jenkinson, *Settlement Report of Jhānsi* (1871); A. Cadell, *Settlement Report of Bāndā* (1881).]

Doāb ('two rivers').—This name is commonly applied to the land between the confluence of any two rivers, but especially to the tract between the Ganges and Jumna in the United Provinces, extending from the Siwāliks to the junction of the two rivers at Allahābād. The central and lower portions from Etāwah to Allahābād are often termed *Antarved*, the meaning of which is said to be either 'between the waters' or 'within the hearth.' *Antarvedī* is also applied to the dialect of Western Hindī used in the central portion, a variety of Braj. The Doāb includes the Districts of Sahāranpur, Muzaffarnagar, Meerut, Bulandshahr, Alīgarh, parts of Muttra and Agra, Etah, Mainpurī, the greater part of Etāwah and Farrukhābād, Cawnpore, Fatehpur, and part of Allahābād. Naturally a rich tract of alluvial soil, it has been irrigated by three fine engineering works, the UPPER GANGES, LOWER GANGES, and EASTERN JUMNA CANALS; and much has been done to improve the drainage of the land. This is the greatest wheat-producing

area in the United Provinces; and it presents an almost unbroken sheet of cultivation, varied only by ravines on the banks of the Jumna and other rivers, and by occasional patches of barren *ūsar* (saline) plain or *dhāk* (*Butea frondosa*) jungle. The contrast between this condition and the state of the Doāb at the end of the eighteenth century is striking. In 1794-5 Mr. Twining, a servant of the Company, who travelled from Fatehgarh to Agra, Muttra, Delhi, and back across Alīgarh, described most of the tract as a sandy waste. Although before British rule famine repeatedly devastated this area, canal irrigation has now rendered the greater part of it safe. In 1896-7 the peasants of the Upper Doāb were able to hold stocks of grain, while almost every other part of the United Provinces was importing. The Fatehpur branch of the Lower Ganges Canal, opened in 1898, will do much for the three Districts nearest the confluence of the Ganges and Jumna. Cawnpore, the largest manufacturing town in the United Provinces, which is also an important collecting and distributing centre, Hāthras, Meerut, Sahāranpur, Allahābād, and Etāwah are the chief commercial marts. Small thriving towns are numerous, and a network of railways crosses the area in every direction, providing excellent means of communication with all parts of India. The Doāb, though it has lain in the track of all invaders from the north, was never an historical entity, and the history of its different portions will be found in the accounts of the Districts composing it.

Hindustān.—A vaguely-defined area, sometimes applied to the whole of India north of the Vindhyas, in contradistinction to the Deccan (*Dakshin*, 'south'), which lies south of them. Hindustān, in this sense, is bounded on the north by the Himālayas, on the east by Assam, on the south by the Vindhyas, and on the west extends into the Punjab and Rājputāna. It accordingly comprises the administrative tracts forming the Lieutenant-Governorships of Bengal and the United Provinces, together with the eastern portions of the Punjab and Rājputāna, and most of Eastern Bengal and Assam. In Muhammadan histories the term is used for a smaller area, comprising the east of the Punjab and Rājputāna and the greater part of the United Provinces. Thus Abul Fazl treated the Province of Lahore as outside of Hindustān. During the eighteenth and first half of the nineteenth centuries the term Hindustān was loosely employed by geographers to include the whole of India. The name means the 'place of the Hindus'; and it has been applied to the *lingua franca* of Northern India,

called Hindustāni or Urdū, which is a dialect of Western Hindī, with a greater or less admixture of Arabic and Persian vocables, according to the taste of the speaker.

Kosala (from *Kushala*, 'happy').—Two tracts of this name are known in Hindu literature. That north of the Vindhyas corresponded roughly with Oudh. In the Rāmāyana it is the country of Dasaratha and Rāma, with its capital at Ajodhyā, and it then extended to the Ganges. It was part of the holy land of Buddhism, and in Buddhist literature kings of Kosala ruled also over Kapilavastu. Srāvastī, the site of which is disputed, was the capital of Uttara Kosala, the northern portion over which Lava, son of Rāma, ruled after his father's death. Southern or Great Kosala (Dakshina or Mahā Kosala), which fell to Kusa, the other son of Rāma, lay south of the Vindhyas. In the seventh century Hiuen Tsiang describes it as bounded by Ujjain on the north, Mahārāshtra on the west, Orissa on the east, and Andhra and Kalinga on the south. It thus lay in Chhattīsgarh about the upper valley of the Mahānadī and its tributaries, from Amarkantak on the north to Kānker on the south, and may at times have extended west into Mandlā and Bālāghāt Districts, and east into Sambalpur. From about the year 1000 the tract was absorbed in a new kingdom called Chedi (eastern).

[For Northern Kosala, see Lassen, *Ind. Alt.*, vol. i, p. 129, and authorities quoted there; Rhys Davids's *Buddhist India*, passim. For Southern Kosala, see Cunningham, *Archaeological Survey Reports*, vol. xvii, p. 68, and map; and *Coins of Mediaeval India*, p. 73.]

Madhya Desa ('the middle country').—At present this name is not infrequently used by Hindus for the Ganges and Jumna Doāb. It had a more extended meaning formerly; and in early times it probably included the tract lying between the place (at Bhatner in Rājputāna) where the Saraswatī disappears on the west and Allahābād on the east, stretching to the Himālayas on the north and the Vindhyas on the south. This was the area within which Brāhmanism had its rise and full development, and it is still regarded as a holy land of Hinduism. But according to Varāha Mihira, the Sanskrit geographer of the sixth century A.D., the Madhya Desa extended as far west as Mārwār, while the Yāmunas, or people living on the banks of the Jumna, were partly in this and partly in the northern country, and the Vindhyas are wholly excluded. Alberūnī explained it as the country lying round Kanauj.

[Lassen, *Ind. Alt.*, vol. i, p. 92; Fleet, *Ind. Ant.*, 1893, p. 169.]

Magadha.—This ancient kingdom is referred to in both the Rāmāyana and the Mahābhārata. The greater part of Magadha proper was situated in Bihār south of the Ganges, with its capital first at Rājagriha and afterwards at Pātaliputra (Patna); but it also extended into the east of what is now the United Provinces, where it marched with the kingdom of Benares. Magadha was the scene of many episodes in the life of Gautama and is important in the history of Buddhism. About the same period Mahāvīra founded the cognate sect of the Jains. At the time of Alexander's invasion, the kings of Magadha appear to have been recognized as paramount over the greater part of the United Provinces as well as over Bengal. Their dominion was still further extended by Chandragupta Maurya and his grandson, the famous Asoka. The Maurya dynasty declined after Asoka's death, and Magadha was conquered about 150 B.C. by a king of Kalinga; but towards the end of the fourth century A.D. a new line of Gupta kings renewed the glories of Magadha, and gradually spread westward to Allahābād, Kanauj, and even to Gujarāt, while Samudra Gupta temporarily conquered part of the Deccan. When the Gupta empire broke up early in the sixth century, Magadha was subdued by the Chālukya king Kīrttivarman (I), but again became a small kingdom, still ruled by an eastern branch of the Guptas. Inscriptions give the names of eleven kings, the eighth of whom was reigning in 672. The kingdom was absorbed in the dominions of the Pāl dynasty of Bengal in the ninth century. In 1197 the last of the Pāls was dethroned by Muhammad Bakhtiār Khiljī, and the kingdom of Magadha was included in the empire of the Slave kings of Delhi. Magadha formed part of the Jaunpur kingdom for a time, and its later history merges in that of Bihār. Varāha Mihira, the Sanskrit geographer of the sixth century A.D., mentions Magadha as situated in the eastern division of India between KOSALA and MITHILĀ (Tirhut). The kingdom has given its name to a tribe of Brāhmans called Māgadha or Sākaldwīp Brāhmans, and also to the Magahiyā subdivision of the low-caste Doms. Like other kingdoms east of MADHYA DESA, its inhabitants were held in low esteem, and this feeling has survived to the present day.

[Lassen, *Ind. Alt.*, vol. i, pp. 135 and 602; Pargiter, *J.A.S.B.*, 1897, p. 86; McCrindle, *Invasion of India by Alexander*, pp. 36, 56, 380, and 404–8; Fleet, *Ind. Ant.*, 1893, pp. 170, 183, and *Gupta Inscriptions*, pp. 200–20; Duff, *The Chronology of India*, passim.]

Mewāt.—An ill-defined tract lying south of Delhi, and including part of the British Districts of Muttra and Gurgaon, and most of the Alwar and a little of the Bharatpur States. It takes its name from the Meos, who appear to have been originally the same as the Mīnās of Rājputāna, but say that they have not intermarried with these since the time of Akbar. The origin of the name Meo is disputed, some deriving it from Mewāt, which is said to be the Sanskrit *mīnā-vatī*, 'rich in fish,' while the Meos themselves derive it from *maheo*, a word used in driving cattle. Mīnā is said to come from Amīna Meo or 'pure' Meo, a term applied to those who did not become Musalmāns. The Hindu Meos and Mīnās claim to be Rājputs, but are not so regarded by other Hindus, and it is certain that outsiders have often been admitted in the past. Their tribal constitution varies in different places. The Muhammadan Meos call themselves Mewātīs. In 1901 there were 10,546 Meos and Mīnās in the United Provinces, chiefly in the Districts of Meerut (916), Bulandshahr (4,745), Agra (906), Bijnor (1,263), Budaun (884), and Morādābād (1,070); and 51,028 Mewātīs, chiefly in the Meerut (22,576), Agra (7,316), and Rohilkhand (16,129) Divisions. The large number in Rohilkhand, which was never part of Mewāt, is explained by a migration owing to famine in Mewāt in 1761–2. The Meos of Rājputāna numbered 168,596, or nearly 2 per cent. of the total population. Practically all are Muhammadans, and they are found in thirteen out of eighteen States. In Alwar there were 113,142, or over 13 per cent. of the population; and in Bharatpur 51,546, or 8 per cent. The Khānzāda subdivision is represented by 9,317 members, most of whom are in Alwar. The Mewātīs have preserved many Hindu customs, such as exogamous rules and Hindu festivals.

According to tradition, the Meos first crossed the Jumna in the period of anarchy which succeeded the invasion by Mahmūd of Ghazni in 1018–9. The great Rājput clans of Bulandshahr and Etāwah state that they dispossessed the Meos at the order of Prithwī Rāj of Delhi towards the end of the twelfth century. Throughout the period of Muhammadan rule the Meos were the Ishmaelites of their own country and of the Upper Doab, though harried again and again by the kings of Delhi, from Nāsir-ud-dīn Mahmūd (1259) to Bābar (1527). During the troubled times of Tīmūr's invasion (1398) Bahādur Nāhar, who founded the subdivision of Mewātīs called Khānzādas, members of which were, for many years, rulers of Mewāt, was one of the most powerful chiefs in this part of India. Under Akbar the

tract was divided between the *sarkārs* of Alwar and Tijāra in the *Sūbah* of Delhi. The rule of the Mewātīs was subsequently challenged by the Jāts, who had already risen to importance before the death of Aurangzeb in 1707, and consolidated their power in Southern Mewāt in the first half of the eighteenth century; and from this time the history of Mewāt merges in that of Alwar and Bharatpur. The Meos and Mewātīs, however, retained their character for turbulence; and towards the end of the eighteenth century travelling in the Upper and Central Doāb was unsafe owing to armed bands of Mewātī horsemen. They gave much trouble to Lord Lake's forces in the Marāthā War of 1803, while in the Mutiny they and the Gūjars were conspicuous for their readiness to take advantage of disorder.

[W. Crooke, *Tribes and Castes of the North-Western Provinces and Oudh*, vol. iii, p. 485 et seq., where full authorities are quoted.]

Physical aspects.

Oudh (*Awadh*)[1].—A British Province, forming part of the UNITED PROVINCES, lying between 25° 34′ and 28° 42′ N. and between 79° 41′ and 83° 8′ E. Area, 23,966 square miles. Population (1901), 12,833,077. The name is a corruption of that of the ancient city of Ajodhyā (Ayodhyā), which became the seat of a local governor under the early Muhammadan rulers. Oudh is bounded on the north by the State of Nepāl, and on all other sides by the Province of Agra. The Gorakhpur and Benares Divisions lie on the east, the Bareilly and Agra Divisions on the west, and the Allahābād Division on the south. The river Ganges forms the greater part of the south-western boundary. Oudh includes portions of two of the great natural divisions of Upper India. The three northern Districts of Kherī, Bahraich, and Gondā stretch up into the submontane tract lying below the Himālayas, while the remainder of the Province lies in the central portion of the Gangetic plain. The northern boundary of Bahraich and Gondā runs for 60 miles along the low hills which mark the first rise above the level of the plain; but the submontane tract or *tarai* is chiefly distinguished by its greater slope and excessive moisture, due to a heavier rainfall and the drainage from the outer ranges of the Himālayas. In the northern portion of the Province there are large areas of forest land. Geologically, the whole of Oudh is classified as Gangetic

[1] This article deals only with matters in which Oudh differs from the rest of the UNITED PROVINCES, to the article on which reference should be made for other details.

alluvium. No rock or stone is found except *kankar* (nodular limestone), which is used for metalling roads. Gold is obtained in very small quantities by washing sand in the rivers in the north of the Province. Salt was extensively manufactured during native rule, but the industry has been prohibited for many years. The flora is described in the article on the UNITED PROVINCES.

River system and lakes. The country slopes from north-west to south-east, and the drainage follows the same line, being divided into two great river systems, those of the GOGRA and GANGES, which ultimately unite in Bengal. The Province may thus be divided into two tracts separated by the Gogra. On the north-east the districts of Bahraich and Gondā form a triangular area, a portion of which is drained by the RĀPTĪ, with a course roughly parallel to that of the Gogra, into which it falls in Gorakhpur District, while the greater part of the drainage is carried directly into that river. The rest of the Province is roughly rectangular in shape, and lies between the Gogra and the Ganges. Through the centre of this portion flow the GUMTĪ and its southern tributary the SAI, which carry off most of the drainage into the Ganges. It is only in the northern Districts of Kherī and Sītāpur that the Gogra obtains an increase to its volume through the SĀRDĀ and its branches. The numerous shallow ponds or *jhīls*, of which the DĀHAR LAKE is the most important, form a more valuable source for irrigation than the rivers.

Scenery. The general aspect of the Province, except during the hot season when the land is bare, is that of a rich expanse of waving and very varied crops, interspersed with numerous ponds or shallow lakes, mango groves, and bamboo clumps. The villages lie thickly scattered, consisting of low cottages surrounded by patches of garden-land. The dense foliage of mango plantations marks the site of almost every little homestead. *Mahuā* (*Bassia latifolia*), plantains, guavas, and jackfruits add further beauty to the village plots. The scenery, as a whole, has few claims to attention, except so far as trees and water may occasionally combine to produce a pleasing effect; but the varied colouring of the ripe crops, the sky, and the groves or buildings, often charm the eye under the soft haze of a tropical atmosphere.

History. Legends. The legendary accounts of Oudh centre round AJODHYĀ or Awadh, the city from which the Province takes its name. This was the capital of Kosala, the kingdom of Dasaratha of the Solar race, father of Rāma, from which the hero went forth into

exile with his wife Sītā and his brother Lakshmana, and to which he returned in triumph after the defeat of Rāvana, king of Ceylon. Many places in Oudh are visited by pilgrims on appointed days as connected with the story. After the death of Rāma the kingdom was divided into Northern Kosala, ruled by his son, Lava, at Srāvastī, and Southern Kosala, ruled by another son, Kusa. No approximate date can be assigned to whatever may be historical in the story of the Rāmāyana.

Buddhism. In the Buddhist literature of the centuries immediately before the Christian era, Srāvastī figures as an important place at which Gautama spent many years. Its exact site is disputed, but the kingdom of which it was the capital certainly included part of Oudh north of the Gogra. The rest of the province still preserves many remains of the Buddhist faith, which have not been thoroughly examined. An inscription of the twelfth or thirteenth century found at SET MAHET in the Gondā and Bahraich Districts shows that Buddhist tenets were held as late as that date, but the Chinese pilgrims in the fifth and seventh centuries lament that the faithful were even then few.

Mediaeval period. Little more is known of Oudh up to the rise of the Guptas of Magadha, who gradually extended their dominions westward from Patna in the fourth century A. D., and according to the Purānas took Sāketam or Ajodhyā. The once populous tract north of the Gogra relapsed into jungle, and the ancient city of Srāvastī was deserted by the seventh century.

According to tradition, the Thārus who are still found in the *tarai* descended from the hills in the eighth or ninth century; and legend tells of a line of Somavansi kings, the last of whom, Suhil Deo, fought with Saiyid Sālār. In these dark ages, while the Rājput clans were rising into importance, Western Oudh must have been subject to the rulers of Kanauj or Katehr, and Eastern Oudh to Benares, till this was absorbed in the great kingdom of Kanauj.

Early Muhammadan period. The raid of Mahmūd Ghaznivid, in 1018–9, extended from Kanauj through part of Southern Oudh; and there are many tombs in the province, said to be those of warriors who fell in the expedition of his canonized nephew, Saiyid Sālār, the tomb of the saint himself being at Bahraich. It was nearly two centuries later, however, before Muhammad Ghorī's general, Kutb-ud-dīn, finally defeated Jai Chand of Kanauj in 1194, and thus broke up the last great Hindu kingdom. Not long afterwards the Bhars, a dark-skinned aboriginal race still existing as a low caste, rose into importance in Southern Oudh and in Bundelkhand, but were crushed in 1247; and the

history of the province for nearly 500 years is a part of the general history of the kingdom of Delhi. There were local governors at Ajodhyā, Bahraich, Saṇḍīla, Mānikpur, and other places, who often found it difficult to maintain their authority; for in Oudh, as in Bundelkhand, the Hindus were never thoroughly subdued, as they were at an early date in the Doāb and later in Rohilkhand. In 1394 Khwāja Jahān was made governor of Kanauj, Oudh, Karā, and Jaunpur, and soon afterwards assumed independence. For more than eighty years the province formed part of the great Sharkī (or Eastern) kingdom of Jaunpur, and shared in the struggle with Delhi, which ended with the fall of Jaunpur in 1478. In the south-western corner Tilok Chand, head of the Bais Rājputs, gradually rose to power and became the greatest noble in Oudh, with a large tract owning his sway, known as BAISWĀRĀ.

The Mughals. After Bābar had gained a footing in Hindustān by his victory at Pānīpat in 1526, and had advanced to Agra, the defeated Afghān house of Lodī still occupied the Central Doāb, Oudh, and the eastern Districts of the present United Provinces. In 1527 Bābar, on his return from Central India, defeated his opponents in Southern Oudh near Kanauj, and passed on through the province as far as Ajodhyā, where he built a mosque in 1528, on the site renowned as the birthplace of Rāma. The Afghāns remained in opposition after the death of Bābar in 1530, but were defeated near Lucknow in the following year. The Mughal power was, however, still far from secure; and Sher Khān (afterwards Sher Shāh), the new leader of the Afghāns, gradually increased his influence till in 1540, by his victory at Kanauj, he compelled Humāyūn to fly from India. For five years the country was at rest; but on the death of Sher Shāh in 1545 the Afghān power began to fall to pieces, and Humāyūn returned in 1555. Under Akbar a redistribution of the empire into provinces took place. Oudh was formed into a *Sūbah* or province, containing five *sarkārs* or divisions and thirty-eight *mahāls* or *parganas*. The provincial forces consisted of 7,640 cavalry, 168,250 infantry, and 59 elephants. Awadh or Ajodhyā was then one of the principal cities in India, and Lucknow was rising in importance. Akbar's government was not established without a struggle, and in 1565 the *jāgīrdārs* Iskandar Khān of Ajodhyā and Khān Zamān of Jaunpur revolted and took Lucknow, but were soon defeated. It is noticeable that in the list of Akbar's grandees only three belonged to Oudh, one of whom was a Hindu, the celebrated Todar Mal.

Eighteenth century. The rule of the Mughal emperors was uneventful for Oudh during the next 150 years, when the chief centre of interest lay in the Deccan. Local prosperity may be inferred from the rise in revenue, which was 50 lakhs in 1594 and 83 lakhs about 1720, while the measured area had increased from 9,933 square miles to 18,577. In the struggles for the succession to Shāh Jahān and Aurangzeb Oudh played no important part. When, however, the Mughal empire fell to pieces, small states arose, the rulers of which obtained practical independence.

Saādat Khān. Among these Oudh took the first place; and its importance dates from the appointment about 1724 of Muhammad Amīn, originally a merchant from Khorāsān, to be governor of Oudh, with the titles of Saādat Khān and Burhān-ul-mulk. The new governor was a great soldier, who soon reduced those of the local Hindu chieftains who opposed him. He built a house a few miles west of Ajodhyā, round which grew up the new town of Fyzābād; but most of his time was spent elsewhere, fighting at one time against the Marāthās and at another against Nādir Shāh, or fulfilling the duties of his office as Wazīr of the empire. Deputies managed his two provinces of Oudh and Allahābād, and on the whole ruled well under his guidance.

Safdar Jang. He was succeeded in 1739 by his nephew and son-in-law, Safdar Jang, who had been his deputy at Fyzābād, and was an able statesman. Under both these rulers the province enjoyed great prosperity, and forts, wells, and bridges were constructed. In 1745 Safdar Jang quarrelled with Alī Muhammad, who was then consolidating the Rohillas on the western boundary of Oudh, and thus commenced the long struggle which was to end in the addition of Rohilkhand to Oudh. When the old Nizām of the Deccan died in 1748, he was succeeded in his office as Wazīr of the empire by Safdar Jang. Then followed a war with the Pathān chief of Farrukhābād, which resulted in Safdar Jang's invoking the assistance of the Marāthās, who afterwards became a menace to his own province. The immediate result, however, was that the Farrukhābād territory became practically dependent on Oudh. In 1754 the emperor Ahmad Shāh deprived Safdar Jang of his office as Wazīr, and aided by the Marāthās successfully drove him back to Oudh when he attempted, with the help of the Jāts, to seize Delhi. In the same year Safdar Jang died and was succeeded

Shujā-ud-daula. by his son, Shujā-ud-daula, who removed the capital for a time to Lucknow, which had first become a considerable town in the time of Sher Shāh. He was engaged almost at once in conjunction with the Rohillas in repelling the Marāthās, who

had been summoned by the new Wazīr, Ghāzī-ud-dīn, and were now looked on as a common enemy of the states of Hindustān. When the prince Alī Gauhar (afterwards Shāh Alam II) escaped from Delhi, he was received by Shujā-ud-daula and advised to proceed against Bengal, where the British power was increasing. In 1761 Shujā-ud-daula fought by the side of the other Muhammadan chiefs in the great battle at Pānīpat, and soon afterwards Shāh Alam gave up his fruitless contests with the British, and retired to Allahābād. Here he was under the control of Shujā-ud-daula, who was appointed to the office of Wazīr, which henceforth became hereditary in his family. After the massacre at Patna in 1763, Mīr Kāsim and his lieutenant, Sumrū, fled to Oudh and were joined by the emperor and Shujā-ud-daula; but the allied troops failed to take Patna and were completely defeated by the British at Buxar in 1764. Shāh Alam, who had taken no part in the fighting, went over to the British, while Shujā-ud-daula fled through Fyzābād and Lucknow to Bareilly. He obtained some help from the Pathāns and even from the Marāthās, and again faced the British in 1765 near Jājmau in Cawnpore District, but suffered defeat a second time. By the treaty then proposed, the British were to obtain the greater part of the present Benares Division, and Shāh Alam was to be placed in possession of the rest of Oudh. The Court of Directors, however, refused to sanction this arrangement, and everything was restored to Shujā-ud-daula, except the districts south of the Ganges (now Cawnpore, Fatehpur, and Allahābād), which were made over to the emperor. Shujā-ud-daula also undertook to pay the British a contribution of 50 lakhs. About this time he moved his court back to Fyzābād, where he built a fort and greatly increased the prosperity of the city. In 1769 the Marāthās returned to Hindustān and assumed a most threatening attitude. Two years later, the emperor disregarded the advice of the British and joined them, leaving Allahābād in charge of Shujā-ud-daula. The danger to Oudh and the British was imminent, and when the Marāthās extorted a grant of the Allahābād territory from Shāh Alam, British troops were sent to occupy Chunār and Allahābād. The Marāthās pressed on, and in 1773 Sir Robert Barker marched to guard the frontiers of Oudh and Rohilkhand under a guarantee of a lakh of rupees a month. British troops aided in driving the Marāthās out of Rohilkhand, and later in the year Warren Hastings met Shujā-ud-daula at Benares. The result was the cession to the Wazīr

of the Allahābād territory, which was taken from the emperor because of his grant of it to the Marāthās, while the Wazīr paid the Company 50 lakhs and undertook to pay 25 lakhs a year, besides the cost of a brigade of British troops to be stationed on the borders of his territories. A permanent British Resident was appointed for the first time at his court, and these arrangements may be said to mark the conversion of Oudh into a state dependent on the Company. Shujā-ud-daula now made fresh efforts to reduce the Rohillas, who had been intriguing with the Marāthās, and had refused to pay for the help given them in 1772. The Council at Calcutta hesitated, but finally sent troops, and in 1774 Rohilkhand was added to Oudh with the exception of the present Rāmpur State, which was left in the hands of a Rohilla chief.

Asaf-ud-daula.

Shujā-ud-daula died in 1775, and was succeeded by his son, Asaf-ud-daula, who was incapable and inclined to debauchery. He was at once required to cede to the Company the *zamīndāri* of Benares, and to pay more for British troops. His personal extravagance was great, and he demanded large sums from his mother, the Bahu Begam. The court was now finally removed to Lucknow, and Fyzābād began to decline, while most of the state suffered from his failure to exercise any personal authority and from the quarrels of his subordinates. In 1781 a new treaty was made by Warren Hastings, under which the British troops in Oudh were reduced to one brigade and one regiment, and the Nawāb was authorized to resume *jāgīrs* or grants of land. Asaf-ud-daula took advantage of this to confiscate the *jāgīrs* of his mother and grandmother, and by imprisoning their chief officers extorted large sums of money from them. Warren Hastings's share in the these transactions was one of the counts in his subsequent impeachment. His approval of the resumption of the *jāgīrs* was, however, justified by the behaviour of the Begams, who had raised the whole of eastern Oudh against the British when the *émeute* at Benares took place in 1781 [1].

Saādat Alī Khān.

Asaf-ud-daula died in 1797, and was succeeded—after a short interval, during which his reputed son, Wazīr Alī, ruled—by his half-brother, Saādat Alī Khān, who concluded a treaty ceding to the Company the fort of Allahābād and promising an annual subsidy of 76 lakhs, while the British in return undertook the entire defence of Oudh. Four years later, after the threatened attack by Zamān Shāh Durrāni, Rohilkhand and other parts of

[1] Warren Hastings's *Insurrection at Banaris*, Appendix, p. 8 (Roorkee reprint, 1853).

the Oudh territories were in a state of anarchy, and it was feared that Sindhia would seize the opportunity to attack the state. The Nawāb, therefore, executed a fresh treaty giving up the so-called Ceded Provinces[1], which left him with the area now called Oudh, surrounded on all sides by British territory except on the north, where the Gurkhas ruled. Sadaāt Alī Khān died in 1814, having been a good ruler compared with his predecessor. In particular, he attempted to reform the revenue administration, one of his chief difficulties being the resumption of grants made by previous rulers. At his death the treasury contained 14 crores of rupees, though all establishments had been paid up to date and there were no debts.

Later rulers. The history of his successors is a miserable record. The only redeeming feature of the period is the occasional employment as minister of the capable Mahdī Alī Khān, who had been trained under Saādat Alī. Ghāzī-ud-dīn Haidar, son of Saādat Alī, was allowed to assume the title of king or Shāh in 1819, and was the first to strike coin in his own name. He spent four crores of the treasure left by his father, and was succeeded in 1827 by his son, Nasīr-ud-dīn Haidar, a debauchee, who aped English manners and left only 70 lakhs when he died in 1837. An attempt was then made to place a putative son on the throne; but a few of the Company's sepoys were sufficient to quell the disturbance that arose, and the uncle of the late king succeeded as Muhammad Alī Shāh. He died in 1842 and was followed by his son, Amjad Alī Shāh (died 1847). In 1850 it was estimated that Wājid Alī Shāh, the last king, was spending more than 20 lakhs annually over and above the whole revenue of the state, while the allowances of his officials and his family were greatly in arrears. Muhammad Alī Shāh had made some attempts at reform in the administration of justice and the revenue system; but Mahdī Alī Khān, whom he recalled for the purpose, was then an old man, and nothing came of them.

Annexation. Open resistance to the king's officials and defiance of all law and order were the ordinary rule. Chronic anarchy and oppression had reduced the people of Oudh to extreme misery, and reform by its native rulers had long been hopeless. In 1828 the Resident had reported that only British assumption of administration could save the country from ruin, and in

[1] The present Gorakhpur Division, most of the Bareilly Division, and the Districts of Allahābād, Cawnpore, Fatehpur, Etāwah, Mainpurī, Etah, and Farrukhābād, the south of Mirzāpur, and the Tarai *parganas* of the Kumaun Division.

1834 the Court of Directors had authorized this step; but it was averted for the time by the improvement effected by Mahdi Alī Khān. In 1856 things had come to such a pass that a treaty was proposed to the king, which provided, on liberal terms to himself and his heirs, for the cession of his state to the Company. The king, however, refused to sign it; and accordingly, in February, 1856, the British Government assumed to itself the government of Oudh, exclusively and for ever. A provision of 12 lakhs a year was offered to the king, which he accepted in October, 1859, and separate provision was sanctioned for his collateral relatives. Wājid Alī Shāh was allowed to retain the title of king of Oudh till his death in 1887, when the title ceased absolutely, and the pecuniary allowances were reduced. On its annexation, Oudh was constituted into a Chief Commissionership, and organized on the model of administration which had been adopted in the Punjab eight years previously. Troops had been moved in, and one British infantry regiment held Lucknow, while native regiments garrisoned Sītāpur, Fyzābād, Sultānpur, Bahraich, Daryābād, Salon, and Secrora. The first year after annexation passed on the whole quietly.

Mutiny. The annexation had, however, caused considerable discontent among important classes. The *talukdārs* feared, with more or less reason, the loss of position and estate. The sepoys, who were largely recruited from the Province, anticipated the curtailment of the exceptional privileges which they had enjoyed while their homes were in native territory. The rebellion began in Oudh a fortnight after the outbreak at Meerut gave the signal for a general rising. In March, 1857, Sir Henry Lawrence had assumed the administration at Lucknow; and on May 30 five of the native regiments broke into mutiny. The remainder of the events connected with the siege and recovery of the capital are narrated in the article on LUCKNOW CITY, and need only be briefly mentioned here. For some time the *talukdārs*, with few exceptions, took no active part in the revolt; several of them did noble service in saving the lives of fugitives; but the native garrisons of the out-stations followed the example of their comrades at Lucknow, and by the middle of June the Residency at Lucknow was the only spot in the Province under the British flag. On July 4 Sir Henry Lawrence died from wounds caused by a shell. For twelve weeks the little Lucknow garrison was besieged by an overwhelming body of mutineers, till relieved by Outram and Havelock on September 25. In spite of

this reinforcement, the British force found itself too weak to fall back upon Cawnpore, and the siege continued till raised by Sir Colin Campbell on November 17. The women and children were then escorted to Cawnpore by the main body, while General Outram held the outlying post of the Alambāgh with a small garrison. Lucknow itself remained in the hands of the rebels, who fortified it carefully under the direction of the Begam[1] of Oudh. Early in 1858 General Franks organized a force at Benares for the reconquest of the Province, and cleared the south-eastern Districts of rebels. At the same time Jang Bahādur, the minister of Nepāl, assisted the British with a body of 8,000 Gurkhas, and twice defeated the insurgents with great slaughter. On the last day in February Sir Colin Campbell crossed the Ganges and marched on Lucknow. Occupying the Dilkushā palace on March 5, he effected a junction with Franks and the Nepalese army, and began the siege the next day. The town was captured after a desperate resistance, and the work of reorganization of the Province began. Early in April Sir Hope Grant marched with a column north-west of Lucknow, and soon afterwards General Walpole passed through Hardoī. In May the rebels who threatened the Cawnpore road were dispersed, and in June the Begam's army, which was threatening Lucknow, was defeated. General Grant marched to Fyzābād in July and then south to Sultānpur, while a force co-operated from Allahābād. The military police, which had been reorganized, and a Sikh contingent under Rājā Randhīr Singh of Kapūrthala did valuable service; and when the Commander-in-Chief took the field in November, 1858, the rebellion collapsed at once, and Oudh was pacified by the end of the year.

Oudh is rich in ancient sites, but none of these has been regularly explored, except the mounds at SET MAHET in the Gondā and Bahraich Districts, which yielded important Buddhist and Jain remains. Opinions are divided as to whether this is the site of the ancient city of Srāvastī. Popular belief associates many places with the aboriginal Bhars, of whose history little is known. At Ajodhyā, which is connected with the legendary history of the Solar race, the Hindu temples are all of modern date. The early Muhammadan period is chiefly represented by traditions of the religious incursion of Saiyid Sālār, whose tomb at Bahraich was built early in the thirteenth century, or 200 years after his death. The mosque Archaeology.

[1] Wife of Wājid Alī Shāh, the last king, and mother of Birjis Kadar, who assumed the throne.

of Bābar at Ajodhyā, and the remains of a few buildings erected by the Sūri Pathāns, may also be mentioned. The Mughals have left few memorials in the Province; and the chief buildings now standing are those erected by the Nawābs and kings of Oudh in the last quarter of the eighteenth and first half of the nineteenth centuries, at FYZĀBĀD and LUCKNOW. The earlier buildings of this period are not unpleasing; but the style degenerated, and the later edifices are vulgar in the extreme.

Population. Density.

Oudh has probably the densest rural population of any equal area in the world. The first Census taken in 1869 returned a total population of 11·2 millions, on an area of 24,000 square miles, yielding an average of 468 persons per square mile; but defects in the procedure probably caused the figures to be exaggerated. In 1881 the population was returned at 11·4 millions, the central Districts having suffered from famine. Ten years later there had been an increase to 12·7 millions, and all parts of the Province showed an increase in prosperity. The famine of 1896–7 caused distress in southern and western Oudh, especially in Hardoī and Rāe Barelī, but the total population increased to 12·8 millions in 1901. Statistics of the population in 1901 for each of the twelve Districts included in the two Divisions of Lucknow and Fyzābād will be found in the article on the UNITED PROVINCES. The average density was 535 persons per square mile; but in single Districts the figure varied from 820 in Lucknow and 704 in Fyzābād to 305 in Kherī. Central Oudh is the most thickly populated portion, while the submontane Districts are less crowded, but are filling up rapidly. Emigration to distant parts of India and to the colonies is becoming considerable. Partābgarh and Rāe Barelī Districts in southern Oudh send the largest numbers to Assam, while the northern Districts of Gondā and Fyzābād supply emigrants to the colonies. The principal city in the Province is Lucknow, which has a population of 264,049, including the cantonments, and is larger than any city in India except the three Presidency towns and Hyderābād. Fyzābād (with Ajodhyā) has a population of 75,085; but there are only three other towns, Bahraich (27,304), Sītāpur (22,557), and Shāhābād (20,036), whose population exceeds 20,000. The absence of large cities and towns is remarkable, and the agricultural population forms nearly 73 per cent. of the total.

Religion.

The proportion of Hindus to Musalmāns in the total population of Oudh is much the same as in the Province of Agra, though the Musalmāns are numerically a little weaker and are

found to a larger extent in towns. Out of 1·7 millions of Musalmāns more than 62,000 are Shiahs, the largest numbers being found in Lucknow city, where the sect of the former kings still has many followers.

Language. Except in Hardoī District, where a dialect of Western Hindī is spoken, the language of the whole of Oudh is the Awadhī dialect of Eastern Hindī, an old form of which was used by Tulsī Dās, the author of the vernacular version of the Rāmāyana, which has been termed the Bible of Upper India. The dialect is still a favourite vehicle for verse, as its forms are more suitable to the indigenous metres than Urdū or Hindustāni, which is used for prose or in conversation by educated people.

Caste, tribe, and race. The caste system is described in the article on the UNITED PROVINCES. In rural tracts more respect is paid to the higher castes than in the Doāb, and the prejudices of Brāhmans and Rājputs against touching a plough are recognized by their landlords, who allow them privileged rates of rent. Brāhmans number 1·4 millions, and Ahīrs and Chamārs each 1·3 millions. Among the cultivating classes may be mentioned the Kurmīs (0·9 million), and Lodhas and Muraos (each 0·4 million); and among lower castes the Pāsīs, numbering nearly a million, who are largely employed as toddy-drawers, *chaukīdārs*, and labourers.

Communications. No metalled roads existed in Oudh at the time of annexation, except that from Cawnpore to Lucknow. After the pacification in 1858 the first lines of communication to be taken up were roads from Allahābād to Fyzābād and from Lucknow to Fyzābād. With the extension of railways the roads have become only of local importance. The main line and a loop of the broad-gauge Oudh and Rohilkhand State Railway pass from north-west to south-east through Oudh, south of the Gogra, while an important branch connects Lucknow with Cawnpore, and a line from Allahābād through Partābgarh and Sultānpur to Fyzābād has recently been opened. The submontane Districts are well served by the narrow-gauge Bengal and North-Western (Company) line and the Lucknow-Sītāpur (State) Railway.

Administration. Oudh remained a separate administration until February, 1877, when the offices of Chief Commissioner of Oudh and Lieutenant-Governor of the North-Western Provinces were united. Since 1902 the title of Chief Commissioner has merged in that of Lieutenant-Governor of the United Provinces. In revenue matters the Chief Commissioner remained the principal authority till after the passing of Act XX of 1890,

under which the control of the North-Western Provinces Board of Revenue was extended to Oudh. For most administrative purposes there is now no difference between the Provinces of Oudh and Agra. The principal exceptions are in the land revenue system, especially in its relation to tenures, the rent law, and the judicial system, each of which will now be described.

Land revenue.

On the acquisition of what is now the Province of Agra, the policy adopted was to set aside the officials who, during the decline of Mughal power, had acquired *quasi*-proprietary rights and a hereditary position. The official *zamīndārs* of Bengal had been tried and found wanting, and an attempt was made to engage for the payment of revenue with the actual occupiers of the soil. In several Districts a double proprietary right was found, the holder of the superior right being called a *talukdār*. The relation of the *talukdār* to the subordinate proprietor was, however, largely a temporary arrangement due to the disturbed state of the country; and the subordinate proprietors were therefore invested with full proprietary rights, subject, in some cases, to the payment of an allowance to the *talukdārs*, who were confirmed only in their ancestral estates. The same policy was applied to Oudh on annexation, though the circumstances were not identical. The *talukdārs* then held 23,543 villages in the Province out of 36,721. A summary settlement was made in 1856, which recognized the rights of the *talukdārs* in 13,640 villages with a revenue of 35 lakhs, and set them aside in 9,903 villages with a revenue of 32 lakhs. The Mutiny broke out in May, 1857, and on the restoration of order in 1858 the policy was completely reversed. In the first place, the proprietary right in practically all the land of the Province was declared to be confiscated on account of rebellion. This proclamation was severely censured in India and in England, but was justified on the ground that the change in policy required the cancellation of existing rights. Only five[1] *talukdārs* had remained loyal; their rights were maintained, and they were subsequently rewarded with large additional grants and a permanent settlement. The other *talukdārs* and landholders were called on to submit, and a liberal measure of indulgence was promised to those who came forward promptly and helped to restore order. Though order had not been completely restored, owing to the suspicion of the *talukdārs* regarding the real intentions of Government, summary settlements

[1] The proclamation of March, 1858, mentioned six, but one was found later to have rebelled.

were commenced in 1859 and 22,658 villages were settled with *talukdārs*. This reversal of the former policy became the subject of much discussion. Lord Canning in April, 1858, described the majority of the *talukdārs* as men, distinguished neither by birth, good service, nor connexion with the soil, who had acquired their position by holding office under a corrupt government; but at the same time he justified the new policy by declaring that the village proprietors had shown themselves unfit for the position in which they had been put. In October he was of opinion that the action of the latter had almost amounted to an admission that they did not value independent rights, and that the *talukdāri* system was 'the ancient, indigenous, and cherished system of the country.' More complete inquiries than were then possible have shown that neither of these statements was altogether correct. With some notable exceptions the majority of *talukdārs* at annexation were not officials, but belonged to families connected with the soil. Many of them were the descendants of hereditary chiefs, whose authority had long been acknowledged over wide tracts of country. So far as the *talukas* represented these chieftainships, or the territory held by a body of clansmen with their Rājā as its head, they were no doubt ancient and indigenous. In its later form, however, when the system had developed under a weak and corrupt government, it is more correctly described as one of convenience, as far as the village proprietors were concerned, than as a cherished institution. Almās Alī, the capable minister of Nawāb Saādat Alī Khān at the end of the eighteenth century, took pains to engage directly with the village occupiers in the part of the Province under his control. For fifty years afterwards a weak central government made few attempts to control its corrupt officials or to keep the peace among the *talukdārs*. The petty Rājās, constantly fighting with each other or with the officials, were interested in attaching to themselves village communities who could aid them with fighting men, while the latter gained by voluntarily including their villages in *talukas*, as the *talukdārs* paid revenue direct to Lucknow and the extortions of the collectors were avoided. Thus by 1856 many of the estates held by representatives of old families had grown far beyond their original limits, by voluntary accessions, by the conquest of weaker neighbours, or by the crushing of the village proprietors. In addition there were the comparatively few large *talukas* put together by court favourites, officials, or bankers. The summary settlement of 1859 restored the status of 1856, regardless

of the methods by which estates had been acquired, except where estates were permanently confiscated for murder or the refusal to submit. The same year a declaration was issued that those *talukdārs* with whom a settlement had been made had acquired permanent, heritable, and transferable rights in their *talukas*. Formal certificates (*sanads*) announcing this were drawn up and distributed. An Act to define the rights of *talukdārs* and to regulate the succession to their estates was subsequently passed (The Oudh Estates Act, 1869). The result has been to give the *talukdārs* absolute powers of disposal of their property, either in their lifetime, or by will [1], notwithstanding the limits imposed by Hindu or Muhammadan law. Most estates descend in case of intestacy to a single heir under a law of primogeniture, the rules of which are contained in section 22 of the Oudh Estates Act, but others are subject to the ordinary law of inheritance.

Talukdārs' Relief Act, 1870.

The *talukdārs*, like the large landholders in all parts of India, have had their troubles. Debts before annexation and mismanagement afterwards involved many of their estates, and in 1870 an Act was passed for their relief. The estates of those who applied to come under its operation were vested in managers, and as a consequence all civil suits and the execution of decrees against such estates were suspended. In all, forty-seven estates with a rental of 25 lakhs were brought under the Act; but three were released almost at once. The remaining forty-four properties were found to be indebted to the amount of 32 lakhs. The working of the Act, while favourable to the *talukdārs*, gave rise to well-founded complaints by creditors. Mortgagees in possession could be ousted, and interest was reduced to not more than 6 per cent. In 1873 it was proposed to make Government loans, so as to free those estates which were certainly capable of repaying them with 5 per cent. interest in twenty years; but two years later it was decided that all private debts should be paid off by loans from Government. More than 26½ lakhs was advanced, and the cost of management was reduced by making Deputy-Commissioners responsible for it. The later administration of the Act was thus similar to the operations of the Court of Wards.

Settled Estates (United Provinces)

In 1894 the *talukdārs* asked that the Act of 1870 might be revived, and also raised the question of making estates inalienable. Discussion followed, and in 1900 an Act was

[1] When all heirs are disinherited, the will has effect only if executed more than three months before the death of the testator and registered within one month of the date of execution.

passed providing that *talukdārs* and grantees in whose estates the rule of primogeniture is in force may apply for permission to bring their estates under the Act. If property is encumbered it may only be 'settled' (or entailed) with the consent of all the encumbrancers, or when Government is satisfied that their interests will not suffer. The 'settlement' may be declared irrevocable, or, if this is not done, it may be cancelled with the sanction of Government. The effect of the Act is to make the holder of a 'settled' estate incapable of alienating or encumbering it; leases may be given only for seven or, with the District officer's sanction, for fourteen years; a testator may only bequeath 'settled' property as a whole, and must bequeath it to an heir. Up to the end of 1904 five estates had been 'settled' under the Act, all but one irrevocably. Act II of 1900.

The terms of the *sanads* of 1859 reserved to the Government power to take such measures as it might think fit to protect the inferior proprietors and village occupants, and an acute controversy took place which was not settled till 1866. In regard to the subordinate proprietors, the dispute was whether rights should be recognized only so far as they were actually enjoyed in 1856, or whether the enjoyment in previous years of rights subsequently lost should be held to give a valid claim. It was soon decided that the settlement courts and not the civil courts should adjudicate on disputed cases, and should be allowed to hear claims to sub-proprietary rights based on enjoyment of rights as far back as 1844 or twelve years before annexation. The definition of what should be considered an enjoyment of rights proved more difficult, and there was hopeless disagreement over the rights of tenants. In the latter case the question turned on whether there was any custom by which length of tenure gave a right of occupancy. An inquiry was held, the results of which were differently interpreted. Finally, in 1866, it was found possible to dispose of the two matters together by what is known as the Oudh Compromise. The *talukdārs* agreed to the detailed rules drawn up for the guidance of the settlement courts in dealing with claims to sub-proprietary rights, which were embodied in Act XXVI of 1866 and later executive orders. It was at the same time decided that tenants who had held proprietary rights within thirty years of annexation should receive occupancy rights, while no other tenant right was recognized. Subordinate rights.

In Oudh the Government demand for revenue has from the first been nominally half of the net rental 'assets.' Where both superior and inferior proprietary rights exist, the settlement Settlement.

was made with the superior proprietor or *talukdār*. It was then decided by the settlement court whether a sub-settlement should be made with the inferior proprietor or not. The latter is called a sub-settlement holder where this was done, and his rights include the power of transfer. In other cases the right awarded was a permanent, heritable, but not transferable lease at a rent fixed by the settlement court. The sub-settlement holder or permanent lessee manages the area in which he has rights, and pays rent (which includes the Government demand) to the *talukdār*. If he falls into arrears, the *talukdār* may either sue in the rent courts or apply to the District officer to collect the rent for him.

Occupancy rights.

It has been shown that the proposal to grant occupancy rights in Oudh based on long holding was given up. By Act XIX of 1868, however, tenants who had possessed proprietary rights within thirty years of annexation, and had lost them when annexation took place, received a heritable, but not a transferable, right of occupancy in the land held by them in the village or estate where they were formerly proprietors. This right includes protection from eviction, except for non-payment of arrears of rent, and carries with it a privileged rate of rent which cannot be enhanced beyond a rate 12½ per cent. below that paid in the neighbourhood by tenants with no right. When the revenue law was consolidated, Acts XVII and XVIII of 1876 granted a similar right to landholders whose proprietary or under-proprietary rights were transferred for arrears of land revenue, or in execution of decree after the passing of these Acts, in respect of as much of the land in their cultivating occupancy at the time of transfer as the District officer might determine. Important changes were introduced by the United Provinces Acts III and IV of 1901. Ex-proprietors who acquire rights under these Acts enjoy a privilege in rent of four annas in the rupee (or one-fourth), and by the latter Act the right was extended to persons whose proprietary or under-proprietary rights had been transferred by voluntary alienation. The right acquired under these Acts is called ex-proprietary, and it accrues only in land continuously cultivated by the ex-proprietor for twelve years before the date of the transfer, or in *sīr*, or homestead land. In Oudh *sīr* means land which had been recognized as *sīr*, or had been cultivated continuously by a proprietor or under-proprietor, for seven years before the passing of the Oudh Rent Act, 1886.

The statutory tenant.

It had been asserted in the great controversy that there was no danger in Oudh of rack-renting, as the land was not fully

cultivated, and tenants were in demand instead of competing for holdings. The population had, however, been underestimated, for while in 1859 it was guessed at between 5 and 8 millions, the Census of 1869 showed it was about 11¼ millions. The extent of the protection afforded by the grant of occupancy rights was over-estimated. Instead of these forming 15 to 20 per cent. of the cultivating classes, they were found to number less than one-half per cent. By 1873 the number of notices of ejectment of ordinary tenants had attracted attention, and annual inquiries showed that these notices were being largely used as a means to enhance rents. In 1881 the views expressed by the Famine Commission on the relations between landlord and tenant in Northern India led to further inquiry; and the estate of one *talukdār* was sequestrated on the ground that he had enhanced rents excessively and discouraged cultivation, and thus committed a breach of the conditions of his *sanad*, which directed him to promote the agricultural prosperity of his estate. The order was cancelled by the Government of India; but at the same time more information was called for on the state of Oudh, and a careful inquiry was made in 1882–3. This showed that there had been a considerable enhancement of rent during the thirteen or fourteen years which had elapsed since settlement. In the villages selected the average incidence of rent had increased by nearly 25 per cent., the increase varying from 14 per cent. in Gondā to over 49 per cent. in Partābgarh. There was a general feeling that the tenants should be placed in a more secure position, and that enhancement should bar a further increase for a certain time. The remedies to be applied were the subject of much discussion, which resulted in the Oudh Rent Act of 1886. Under this law all tenants without a right of occupancy obtained the statutory right to retain the holdings occupied by them when the Act was passed, at the rent then payable, for a period of seven years from first occupation or from the last change in the rent or area of the holding. After each period of seven years rent may be enhanced within a limit of 6¼ per cent. On the death of a tenant his heir may complete the period of seven years then current, after which the landlord may make a fresh contract for rent without the 6¼ per cent. limit; but this in turn becomes subject to the septennial revision described above. A statutory tenant may be ejected at the close of a seven years' period; but unless the tenant is ejected because he has refused to pay a legal enhancement, a penal court fee of half the annual rent not exceeding Rs. 25 is levied, and in any case the new rent may not exceed the old by more than 6¼ per

cent. This Act has worked well, though it has not entirely prevented enhancements beyond the legal limit. In many cases such enhancements have been borne without complaint where rents were inadequate; but the tenantry have shown themselves ready to come forward freely where real injustice is done, and they are certainly better protected than they were before.

Judicial. The judicial system in Oudh is separate from that of Agra. Up to 1879 the ordinary non-regulation system prevailed, according to which the same officials exercised civil, revenue, and criminal powers. In that year it was modified, and under the Oudh Civil Courts Act of 1879 Munsifs and Subordinate Judges were appointed for civil work. The Commissioners of Divisions continued to be Divisional, Civil, and Sessions Judges till April, 1891, when District Judges were appointed and two Commissionerships were abolished. The highest court of appeal is that of the Judicial Commissioner, who was in 1905 assisted by one permanent and one temporary Additional Judicial Commissioner. District Magistrates, as in most non-regulation Provinces, can pass sentences of imprisonment up to a limit of seven years. The principal statistics of civil litigation are given below. Civil suits proper are more numerous proportionately to the population than in Agra, but tend to decrease, while rent suits are fewer, but are increasing.

	Average for ten years ending 1890.	Average for ten years ending 1900.	1901.	1903.
Suits for money and movable property	48,433	48,389	38,641	39,144
Title and other suits	7,956	7,307	8,568	7,697
Rent suits	31,066	34,889	37,363	49,658
Total	87,455	90,585	84,572	96,499

[Sleeman, *Journey through Oude* (1858); Hoey, *Memoirs of Delhi and Fyzābād* (1885 and 1889); Irwin, *The Garden of India* (1880); McLeod Innes, *Lucknow and Oudh in the Mutiny* (1902); Gubbins, *Mutinies in Oudh* (1858); *Blue Books of* 1856, 1857, 1858, 1859, 1861, and 1865; *Papers relating to Under-proprietary Rights and Rights of Cultivators in Oudh* (Calcutta, 1867); *Conditions of Tenantry and Working of Rent Law in Oudh* (Allahābād, 1883).]

Panchāla.—An ancient kingdom of Northern India, forming the centre of the MADHYA-DESA or 'middle country.' There

were two divisions: Northern Panchāla, with its capital at AHĪCHHATTRA or Adikshetra, in Bareilly; and Southern Panchāla, with its capital at KAMPIL, in Farrukhābād. They were divided by the Ganges, and together reached from the Himālayas to the Chambal. In the Mahābhārata we find the Pāndava brothers, after leaving Hastināpur (in Meerut District) and wandering in the jungles, coming to the tournament at the court of Drupada, king of Panchāla, the prize for which was the hand of his daughter, Draupadī. The scene of the contest is still pointed out west of Kampil, and a common flower in the village lanes bears the name of *draupadī*. In the second century B.C. Northern Panchāla appears to have been a kingdom of some importance, for coins of about a dozen kings inscribed in characters of that period are found in various parts of it, but not elsewhere. It has been conjectured that these were the Sunga kings who, according to the Purānas, reigned after the Mauryas; but only a single name, Agni Mitra, is found both in the Purānic lists and on the coins, though many others are compounds with Mitra ('friend'). The coins point to an absence of Buddhistic tendencies. Varāha Mihira, the Sanskrit geographer of the sixth century A.D., mentions a people, the Panchālas, who evidently inhabited the region described above.

[Lassen, *Ind. Alt.*, vol. i, p. 598; Cunningham, *Coins of Ancient India*, p. 79; Fleet, *Ind. Ant.*, 1893, p. 170.]

Rohilkhand.—The name is often applied to the present BAREILLY DIVISION of the United Provinces; but it also denotes a definite historical tract nearly corresponding with that Division *plus* the RĀMPUR State and the Tarai *parganas* of Nainī Tāl District. It is derived from a Pashtū adjective *rohelah* or *rohelai*, formed from *rohu* ('mountain'). Rohilkhand as thus defined contains an area of 12,800 square miles, forming a large triangle bounded on the north by the Himālayas, on the south-west by the Ganges, and on the east by the Province of Oudh. In the north lies a strip of the Tarai below the hills, with large stretches of forest land, the haunt of tigers and wild elephants, and only small patches of cultivation belonging to the Thārus and Boksās, jungle tribes, apparently of Mongolian origin, who seem fever-proof. Passing south the land becomes drier, and the moisture drains into the numerous small streams rising in the Tarai and joining the Rāmgangā or the Ganges, which ultimately receive most of the drainage. In the northern portions of Bijnor and Bareilly Districts, canals drawn from the Tarai streams irrigate a small area. The climate is healthy, except near the Tarai, and has a smaller range of temperature

Physical features.

than the tract south of the Ganges. The rainfall is heavy near the hills, but gradually decreases southwards. The usual crops of the plains are grown throughout the tract, but sugar-cane and rice are of special importance. Wheat, gram, cotton, and the two millets (*jowār* and *bājra*) are also largely produced.

History. In early times part of the tract was included in Northern PANCHĀLA. During the Muhammadan period the eastern half was long known as Katehr; but the origin and meaning of this term is disputed. It is certainly connected with the name of the Katehriyā Rājputs, who were the predominant clan in it; but their name is sometimes said to be derived from that of the tract, which is identified with the name of a kind of soil called *kather* or *katehr*, while traditions in Budaun District derive it from Kāthiāwār, which is said to be the original home of the clan. Elsewhere the tribal traditions point to the coming of the Katehriyās into this tract, from Benares or Tirhut, in the twelfth and fourteenth centuries. The portion they first occupied seems to have been the country between the Rāmgangā and the Ganges, but they afterwards spread east of the former river. When the power of Islām was extending westwards, Rāthor princes ruled at Budaun; but the town was taken by Kutb-ud-dīn Aibak in 1196, and afterwards held continuously by the Muhammadans. The province was, however, always turbulent, and two risings are described in the middle of the thirteenth century. In 1379 or 1380 Khargu, a Hindu chief of Katehr, murdered Saiyid Muhammad, the governor, at a feast; and Fīroz III Tughlak, foiled in his attempt to seize Khargu, who fled to Kumaun, appointed an Afghān governor at Sambhal with orders 'to invade the country of Katehr every year, to commit every kind of ravage and devastation, and not to allow it to be inhabited until the murderer was given up.' Thirty-five years later, when the Saiyid dynasty was being founded, another Hindu, Har Singh Deo, rebelled, and though several times defeated gave trouble for two or three years. Mahābat Khān, the governor, successfully revolted in 1419 or 1420 from the rule of Delhi; and the king, Khizr Khān, failed to take Budaun, which remained independent for four years, till after the accession of Mubārak Shah, who showed greater force and received Mahābat Khān's submission. In 1448 Alam Shāh Saiyid left Delhi and made Budaun his capital, careless of the fact that he was thus losing the throne of Delhi, which was seized by Bahlol Lodī. Until his death thirty years later, Alam Shāh remained at Budaun, content with this small province. During the long struggle between the Jaunpur and the

Delhi kings, the former held parts of Katehr for a time. In the first half of the sixteenth century few events in this tract have been recorded; but the last revolt of the Katehriyās is said to have taken place in 1555–6. In the reign of Akbar the *sarkār* of Budaun formed part of the *Sūbah* of Delhi. The importance of Budaun decreased, and Bareilly became the capital under Shāh Jahān, while Aurangzeb included the district of Sambhal (Western Rohilkhand) in the territory ruled over by the governor of Katehr. At this time Afghāns had been making many settlements in Northern India; but they were generally soldiers of fortune, rather than politicians or men of influence. Under Shāh Jahān they were discouraged; but they were found useful in the Deccan campaigns of Aurangzeb, and early in the eighteenth century the Bangash Pathān, Muhammad Khān, obtained grants in FARRUKHĀBĀD, while Alī Muhammad Khān, whose origin is obscure, began to seize land north of the Ganges. The former held the southern part of the present Districts of Budaun and Shāhjahānpur; but the principality he carved out for himself lay chiefly south of the Ganges. Alī Muhammad gave valuable help to the governors of Morādābād and Bareilly against the Rājā of Kumaun, and also assisted the emperor in his intrigues against the Saiyids of Bārha, for which he was rewarded with the title of Nawāb. When Nādir Shāh invaded India, Alī Muhammad gained many recruits among the refugees from Delhi, and took advantage of the weakness of the central government to annex all the territory he could seize. The governors of Morādābād and Bareilly were sent against him, but both were slain, and in 1740 he was recognized as governor of Rohilkhand. His next exploits were against Kumaun; but by this time Safdar Jang, Nawāb of Oudh, had begun to look on him as a dangerous rival, and persuaded the emperor that the Rohillas should be driven out. In 1745 Alī Muhammad was defeated and imprisoned at Delhi, but afterwards he was appointed to a command in the Punjab. On the invasion by Ahmad Shāh Durrāni in 1748, he was able to return to Rohilkhand, and by judiciously supporting the claims of Safdar Jang to be recognized as Wazīr, obtained a fresh grant of the province. On the death of Alī Muhammad, Rahmat Khān, who had been one of his principal lieutenants, was appointed regent for his sons. Safdar Jang renewed his attempts to take Rohilkhand, and persuaded Kaim Khān, son of Muhammad Khān Bangash, of Farrukhābād, to invade it. The attack was unsuccessful, and Kaim Khān lost his life. Safdar Jang at once annexed the Farrukhābād territories; but Kaim Khān's brother,

Ahmad Khān, regained them, and attempted to win the active sympathy of the Rohillas, which was at first refused and then given too late; for Safdar Jang called in the Marāthās, with whose help he defeated the Rohilla and Bangash forces, and Rahmat Khān was driven to the foot of the Himālayas. In 1752 he yielded and gave bonds for 50 lakhs, which were made over to the Marāthās in payment of their services. When Ahmad Shāh Durrāni invaded India a second time, he brought back Alī Muhammad's sons, Abdullah and Faiz-ullah, who had been in Kandahār since the previous invasion; but Rahmat Khān skilfully arranged a partition of Rohilkhand, so that the brothers fought among themselves, and eventually Rahmat Khān and his friends became masters of most of the province. About this time (1754) another Pathān, named Najīb Khān, was rising in power. At first he acquired territory in the Doāb, but in 1755 he founded Najībābād in Bijnor, and thus held the northern part of Rohilkhand independently of the other Rohillas. After the third Durrāni invasion in 1757, he became Bakhshī or paymaster of the royal troops, and the following year an attempt was made, through the jealousy of other nobles, to crush him by calling in the Marāthās. Rahmat Khān and Shujā-ud-daula, the new Nawāb of Oudh, were alarmed for their own safety, and hastened to help him, and the Marāthās were driven out of Rohilkhand. When Ahmad Shāh Durrāni invaded India a fourth time, the Rohillas joined him and took part in the battle of Pānīpat (1761), and Rahmat Khān was rewarded by a grant of Etāwah, which had, however, to be conquered from the Marāthās. In 1764 and again in 1765 the Rohillas gave some assistance to Shujā-ud-daula in his vain contests with the English at Patna and at Jājmau; but they did not suffer for this at first. In fact the next five years were prosperous, and Rahmat Khān was able to undertake one of the most necessary reforms of a ruler in this part of India—the abolition of internal duties on merchandise. In 1770 the end began. Etāwah and the other territory in the Central Doāb were annexed by the Marāthās. Najīb Khān and Dunde Khān, who had been Rahmat Khān's right hand, both died. In 1771 the Marāthās attacked Zābita Khān, son of Najīb Khān, and drove him from his fort at Shukartār on the Ganges, and the next year harried Rohilkhand. In June, 1772, a treaty was arranged between the Rohillas and Shujā-ud-daula, in which the latter promised help against the Marāthās, while the former undertook to pay 40 lakhs of rupees for this assistance. The treaty was signed in the presence of a British general. The

danger to Oudh, and also to the British, from the Marāthās was now clear. Zābita Khān openly joined them in July, 1772, and at the end of the year they extorted a grant of the provinces of Korā and Allahābād from Shāh Alam. In 1773 they demanded from Rahmat Khān the payment of the 50 lakhs promised twenty years before, and again entered Rohilkhand. British troops were now sent up, as it had become known that Rahmat Khān was intriguing with the Marāthās, who openly aimed at Oudh. These intrigues continued even when the allied British and Oudh troops had arrived in Rohilkhand, and the Nawāb of Oudh then made overtures for British help in adding the province to his territories. Finally, Rahmat Khān agreed to carry out the treaty obligations which he had formerly contracted with Oudh, and the Marāthās were driven across the Ganges at Rāmghāt. This danger being removed, Rahmat Khān failed to pay the subsidy due from him to the Nawāb of Oudh. Later in the same year, Warren Hastings came to Benares to discuss affairs with the Nawāb, who strongly pressed for British help to crush the Rohillas. While the Council at Calcutta hesitated, the Nawāb made secret alliances with Zābita Khān and Muzaffar Jang of Farrukhābād, and persuaded the emperor to approve by promising to share any territory annexed. He then cleared the Marāthās out of the Doāb, and in 1774 obtained British troops to assist him against the Rohillas. The latter were met between Mīrānpur Katra in Shāhjahānpur and Fatehganj East (in Bareilly District) in April, 1774, and were defeated after a gallant resistance, Rahmat Khān being among the slain. This expedition formed the subject of one of the charges against Warren Hastings, which was directed to show that his object was merely to obtain money from the Nawāb Wazīr in return for help in acquiring new territory. Contemporary documents prove clearly the necessity for improving the western boundary of Oudh as a defence against the Marāthās, and the danger arising from this country being held by men whose treachery had been manifested again and again. Faiz-ullah Khān, the last remaining chief of the Rohillas, received what now forms the RĀMPUR State, and Zābita Khān lost his possessions east of the Ganges. In 1794 an insurrection broke out at Rāmpur, after the death of Faiz-ullah Khān. British troops were sent to quell it, and gained a victory at Fatehganj West. Seven years later, in 1801, Rohilkhand formed part of the Ceded Provinces made over to the British by the Nawāb of Oudh.

Population.

The total population of Rohilkhand is nearly 6·2 millions.

The density approaches 500 persons per square mile, and in Bareilly District exceeds 600. More than $1\frac{3}{4}$ millions are Muhammadans, forming 28 per cent. of the total—a proportion double that found in the Provinces as a whole. Among Hindu castes may be mentioned the Jāts, who are not found east of Rohilkhand in considerable numbers; the Ahars, who are akin to the Ahīrs of other parts; and the Khāgis and Kisāns, excellent cultivators resembling the Lodhas of the Doāb. The Bishnoī sect has a larger number of adherents than elsewhere.

[Elliot, *History of India*, passim; Strachey, *Hastings and the Rohilla War* (1892).]

Sūrasena.—The ancient name of a tract of country in Northern India, round Muttra. According to the Purānas it was the name of the grandfather of Krishna, whose history is closely connected with Muttra. The inhabitants of the tract were called Saurasenas, and Arrian mentions the *Saurasenoi* as possessing two large cities, *Methora* (MUTTRA) and *Cleisobora* or *Cyrisobora* (not certainly identified)[1], while the *Jobares* river (Jumna) flowed through their territory. Pliny describes the *Jomanes* as flowing between *Methora* and *Carisobora*. Varāha Mihira, the Sanskrit geographer of the sixth century A.D., makes several references to the Saurasenas, who are placed in the MADHYA DESA or 'middle country.' The name has been applied to a variety of Prākrit, called Saurasena, which appears to have been the ancestor of the present language described as Western Hindī in the Linguistic Survey of India. In later times part of this tract was called Braj or Braj Mandal, a name which still survives (see MUTTRA DISTRICT).

[1] Lassen (*Ind. Alt.*, vol. i, p. 127 *n.* 3) suggests that this is equivalent to Krishnapura, which he places at Agra. Cunningham (*Ancient Geography of India*, p. 375) identifies it with BRINDĀBAN. Muttra, Agra, and Brindāban are all on the right bank of the Jumna. See also McCrindle, *Ancient India as described by Megasthenes and Arrian*, pp. 140-1 and note.

MEERUT DIVISION

Meerut Division.—A Division on the north-western border of the United Provinces, extending from the outer ranges of the Himālayas across the valley of the Dūn and its southern boundary, the Siwālik range, to the middle of the Doāb. It lies between 27° 29′ and 31° 2′ N. and 77° 2′ and 78° 38′ E., and is bounded throughout by the JUMNA on the west and the GANGES on the east. The head-quarters of the Commissioner are at MEERUT CITY. The total population of the Division increased from 5,141,204 in 1881 to 5,326,833 in 1891, and 5,979,711 in 1901, the increase during the last decade having been greater than in any other Division of the Provinces. The total area is 11,302 square miles; and the density of population is 529 persons per square mile, compared with 445 for the Provinces as a whole. The Division is the fifth largest in area and the third in population. In 1901 Hindus numbered 75 per cent. of the total and Musalmāns 23 per cent.; other religions include Jains (37,941), Aryas (33,718), Christians (29,294, of whom 22,864 were natives), and Sikhs (4,148). The Division contains six Districts, as shown below:—

District.	Area in square miles.	Population, 1901.	Land revenue and cesses for 1903-4, in thousands of rupees.
Dehra Dūn	1,209	178,195	1,09
Sahāranpur	2,228	1,045,230	17,76
Muzaffarnagar	1,666	877,188	17,57
Meerut	2,354	1,540,175	32,61
Bulandshahr	1,899	1,138,101	23,31
Alīgarh	1,946	1,200,822	27,97
Total	11,302	5,979,711	1,20,31

Dehra Dūn lies chiefly between the Siwāliks and the Himālayas, stretching up into both ranges; Sahāranpur reaches the Siwāliks, but lies chiefly in the great plain; and the other Districts are entirely separated from the hills. The Division

contains 112 towns and 7,713 villages. The largest towns are MEERUT (118,129 with cantonments), ALĪGARH (70,434), SAHĀRANPUR (66,254), HĀTHRAS (42,578), KHURJA (29,277), DEHRA (28,095 with cantonments), HARDWĀR UNION (25,597), MUZAFFARNAGAR (23,444), and DEOBAND (20,167).

The chief places of commercial importance are Meerut, Sahāranpur, Alīgarh (Koil), Hāthras, Khurja, and Muzaffarnagar; but many other smaller towns are important centres of the grain trade. HARDWĀR and GARHMUKTESAR are famous for their religious associations. Hastināpur, now a tiny hamlet, is reputed to have been the capital of the Pāndava kingdom. At KĀLSĪ there is a rock inscription of Asoka; Baran or BULANDSHAHR, ALĪGARH or Koil, and SARDHANA have special associations, referred to in the articles on those places, while Meerut was the place where the great Mutiny first broke out in Northern India in May, 1857.

Boundaries, configuration, and hill and river systems.

Dehra Dūn District.—District in the Meerut Division, United Provinces, lying between 29° 57′ and 31° 2′ N. and 77° 35′ and 78° 18′ E., with an area of 1,209 square miles. It is bounded on the north-east by the Tehrī State; on the south-east by Garhwāl District; on the north-west by the Sirmūr, Rawain, Taroch, and Jubbal States (Punjab); and on the south-west by Sahāranpur District.

The District consists of two distinct portions. The greater part of it forms a gently sloping valley, 45 miles long and 15 to 20 miles broad, between the HIMĀLAYAS and the SIWĀLIK HILLS, divided into two parts by a connecting ridge, from which the eastern Dūn slopes down to the Ganges and the western Dūn to the Jumna. The scenery of these mountain dales can hardly be surpassed for picturesque beauty even among the lovely slopes of the massive chain to which they belong. On the north, the outer range of the Himālayas rises abruptly to a height of 7,000 or 8,000 feet, with the hill station of MUSSOORIE and the cantonments of LANDOUR and CHAKRĀTĀ. The Siwāliks rise with a more gentle slope on the south-west of the valley, but fall away suddenly to the great plain of the DOĀB. The other portion of the District is the Jaunsār-Bāwar *pargana* or Chakrātā *tahsīl*, which strikes north from the outer range of the Himālayas between the valleys of the Tons and Jumna, and consists of a confused mass of ridges and spurs clothed with forest. The drainage of Jaunsār-Bāwar falls into the Tons or the Jumna, which unite where they penetrate the outer range. The western Dūn is drained by the Asan, which falls into the Jumna, and the eastern Dūn by a network of

small channels which meet and diverge, again and again, before they join the Ganges. Both the Jumna and Ganges are here rapid rivers pouring over beds of boulders in several channels with islands between.

Geology. The Siwālik range is composed in its lower and southernmost parts of middle Siwālik soft sandstone or sand-rock with a few thin mammalian fossil-bearing conglomerates, and along its crest of thick upper Siwālik conglomerates. These are all of fresh-water origin, and dip at low angles below the flat surface of the valley. The latter is a broad expanse of recent gravels and consolidated fans of scree derived from the higher ranges. On the north of the valley the middle and upper Siwāliks again emerge, bent into sharp reversed folds by faulting against the older Himālayan series. The much-contorted outer Himālayan rocks include the slates and dark-grey limestones or dolomites of the Mussoorie ridge, the Jaunsār series of dark slates, quartzites, fine volcanic ashes, and basic traps, the Deoban massive limestone which comes above the latter and forms much of the rugged elevated country north of Chakrātā, and finally the Māndhātā conglomerates and Bāwar quartz-schists, which lie flatly above both of the latter series. All these older rocks have proved unfossiliferous and are probably very ancient. Lead and sulphur mines are found on the Tons river at 30° 43′ N., and gypsum in the limestones below Mussoorie[1].

Botany. The arboreal vegetation of the Siwāliks consists largely of species occurring both on the lower slopes of the Himālayas and in the hilly districts of Central and Southern India. Epiphytic orchids are absent, and ferns are but few. The Himālayan long-leaved pine (*Pinus longifolia*) is found, and the *sāl* (*Shorea robusta*) is here near its western limit and only appears in a stunted form. In the valley a rich vegetation is kept green throughout the whole year. The prevailing forest tree is *sāl*, and the flora is an interesting mixture of species found in the plains and species from the lower hills. In the Himālayas the vegetation gradually changes at higher elevations to European genera, and the *deodār*, silver spruce, and weeping pine are found[2].

Fauna. The District is singularly rich in animal life, though the game has been shot down lately. Wild elephants are found in the Siwāliks, and tigers, leopards, sloth bears, spotted and other deer, and monkeys in the forests. Among game

[1] H. S. Medlicott, *Memoirs, Geological Survey of India*, vol. iii, pt. ii, and R. D. Oldham, *Records, Geological Survey of India*, vol. xvi, pt. iv.

[2] *Gazetteer of the Himālayan Districts*, 1882, vol. i, chap. vii.

birds may be mentioned the black and grey partridge, pea-fowl, florican, snipe, woodcock, pheasant, &c. The rivers abound in fish. Mahseer of 40 lb. to 60 lb. weight are frequently caught, and so-called trout (*rohū*) and other species are found in the smaller rivers. The *gūnch* or fresh-water shark is also common.

Climate and temperature.

Extremes of heat and cold in the valley are unknown. The proximity of the Himālayas cools the atmosphere; the hot blasts from the plains do not reach so far, while the heavy rains of the monsoon bring an abundant downpour, and even in May and June occasional showers refresh the country. The eastern Dūn is feverish in the extreme, and is entirely deserted during the rainy season. The temperature in the valley ranges from 37° to 101°, while at Mussoorie it has a range from 27° to 81°.

Rainfall.

The rainfall varies much from one part of the District to another. At Dehra it is 89 inches; at Rājpur, near the foot of the Himālayas, 121; at Mussoorie, 96; and at Chakrātā, 80 inches. The annual fall for the whole District averages 95 inches, and any approach to a real drought is unknown within the memory of man.

History.

In the earliest ages of Hindu legend, Dehra Dūn formed part of the mythical region known as Kedārkhand, the abode of the great god Siva, whose sovereignty is still commemorated in the name of the Siwālik Hills. Many generations later, according to the most ancient myths of the Aryan settlers, the valley became bound up with the two great epics of the Rāmāyana and Mahābhārata. Hither came Rāma and his brother, to do penance for the death of the demon-king, Rāvana; and here sojourned the five Pāndava brethren on their way to the inner recesses of the snowy range, where they finally immolated themselves upon the sacred peak of Mahā Panth. Another memorable legend connects the origin of the little river Suswā with the prayers of 60,000 pigmy Brāhmans, whom Indra, the rain-god, had laughed to scorn when he saw them vainly endeavouring to cross the vast lake formed by a cow's footprint filled with water. The indignant pigmies set to work, by means of penance and mortifications, to create a second Indra who should supersede the reigning god; and when their sweat had collected into the existing river, the irreverent deity, alarmed at the surprising effect of their devotions, appeased their wrath through the good offices of Brahmā. Traditions of a snake, Bāmun, who became lord of the Dūn on the summit of the Nāgsidh Hill, seem to point

towards a period of Nāgā supremacy. The famous Kālsī stone, near Haripur, on the right bank of the Jumna, inscribed with an edict of the Buddhist emperor Asoka, may mark the ancient frontier of Northern India. It consists of a large quartz boulder, standing on a ledge which overhangs the river, and is covered with the figure of an elephant, besides an inscription in the ordinary characters of the period. Hiuen Tsiang does not mention any cities which can be identified as lying within the present District; and tradition asserts that it remained without inhabitants until the eleventh century, when a passing caravan of Banjārās, struck with the beauty of the country, permanently settled on the spot.

Authentic history, however, knows nothing of Dehra Dūn till the seventeenth century, when it formed a portion of the Garhwāl kingdom. The town of Dehra owes its origin to the heretical Sikh Gurū, Rām Rai, a Hindu anti-pope, who was driven from the Punjab and the Sikh apostolate by doubts as to the legitimacy of his birth, and obtained recommendations from the emperor Aurangzeb to the Rājā of Garhwāl, Fateh Sāh. His presence in the Dūn shortly attracted numerous devotees, and the village of Gurudwāra or Dehra grew up around his abode. The Rājā endowed his temple, a curious building of Muhammadan architecture, with the revenue of three estates. The Gurū possessed the miraculous power of dying at will, and returning to life after a concerted interval; but on one occasion, having mistaken his reckoning, he never revived. The bed on which he died still forms an object of reverence to the devout worshippers at his cenotaph. Monuments of earlier date, erected by one Rānī Karnāvati, still exist at Nawādā. Fateh Sāh died soon after the arrival of Rām Rai, and was succeeded (1699) by his infant grandson, Pratāp Sāh, whose reign extended over the greater part of a century. But the flourishing condition of his domain attracted the attention of Najīb-ud-daula, governor of Sahāranpur, who crossed the Siwāliks with a Rohilla army in 1757, and occupied the Dūn without serious opposition. Under Najīb-ud-daula's benevolent and enlightened administration, the District rose to an unexampled degree of prosperity. Canals and wells irrigated the mountain-sides; Muhammadan colonists brought capital to develop the latent resources of the soil; and mango groves, still standing among primaeval forest, bear witness even now to the flourishing agriculture of this happy period. But Najīb-ud-daula's death in 1770 put an end to the sudden prosperity of the Dūn. Henceforth a perpetual inundation of Rājputs, Gūjars, Sikhs, and Gurkhas swept over

the valley, till the once fertile garden degenerated again into a barren waste. Four Rājās followed one another on the throne; but the real masters were the turbulent tribes on every side, who levied constant blackmail from the unfortunate cultivators.

Meanwhile, the Gurkhas, a race of mixed Nepālese origin, were advancing westward, and reached at last the territories of Garhwāl. In 1803 Rājā Parduman Sāh fled before them from Srīnagar into the Dūn, and thence to Sahāranpur, while the savage Gurkha host overran the whole valley unopposed. Their occupation of Dehra Dūn coincided in time with the British entry into Sahāranpur, and the great earthquake of 1803 proved the miraculous harbinger of either event. The Gurkhas ruled their new acquisition with a rod of iron, so that the District threatened to become an absolute desert. Under the severe fiscal arrangements of the Gurkha governors, slavery increased with frightful rapidity, every defaulter being condemned to lifelong bondage, and slaves being far cheaper in the market than horses or camels. From this unhappy condition the advent of the British rule rescued the feeble and degraded people.

The constant aggressions of the Gurkhas against the frontier compelled the British Government to declare war in 1814. Dehra was immediately occupied, while siege was laid to the hill fortress of Nālāpāni or KALANGA, which fell after a gallant defence, with great loss to the besieging force. The remnant of its brave garrison entered the service of Ranjīt Singh, and afterwards died to a man in battle with the Afghāns. A resolution of Government, dated November 17, 1815, ordered the annexation of the new possession to Sahāranpur; while the Gurkhas, by a treaty drawn up in the succeeding month, formally ceded the country. The organization of the District on the British model proceeded rapidly; and in spite of an ineffectual rising of the disaffected Gūjars and other predatory classes led by a bandit named Kalwā, in 1824, peace was never again seriously disturbed. Under the energy and perseverance of its first English officials, the Dūn rapidly recovered its prosperity. Roads and canals were constructed; cultivation spread over the waste lands; and the people themselves, awaking from their previous apathy, began to acquire habits of industry and self-reliance. Jaunsār-Bāwar, now included in the Chakrātā *tahsīl*, historically an integral portion of Sirmūr, had been conquered in the same campaign as the Dūn, but was at first erected into a separate charge under a Commissioner sub-

ordinate to the Resident at Delhi. In 1829, however, it was incorporated with the present District, of which it has ever since formed a part. The Mutiny of 1857 produced little effect in this remote dependency, cut off by the Siwāliks from direct contact with the centres of disaffection in the Doāb or the Delhi Division; and though a party of Jullundur insurgents, 600 strong, crossed the Jumna into Dehra Dūn, they traversed the District without stopping, and never came into collision with the pursuing troops.

Archaeology. The Asoka inscription at Kālsī has already been referred to. It is of great interest as preserving the names of the kings of western countries who were contemporaries of Asoka. At Madhā on the Jumna, 25 miles north-east of Kālsī, some old temples and interesting remains are found. The chief temple, called Lakkha Mandir, contains two inscriptions which, though undated, probably belong to about A.D. 600 to 800. One of the inscriptions refers to the founding of a temple by a princess of Jullundur in the Punjab[1]. An old temple at Rikhikesh, on the Ganges, which is said to have been built by Sankarāchārya, marks a stage on the pilgrim route to Badrīnāth.

The people. The number of towns in the District is 6, and of villages 416. The population at each Census in the last thirty years has been: (1872) 116,945, (1881) 144,070, (1891) 168,135, and (1901) 178,195. The District is divided into two *tahsīls*, DEHRA and CHAKRĀTĀ, the head-quarters of which bear the same names. The chief towns are the municipalities of DEHRA and MUSSOORIE. There are three cantonments: at Dehra, LANDOUR (adjoining Mussoorie), and CHAKRĀTĀ.

The principal statistics of population in 1901 are shown below:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Dehra	731	4	377	127,094	174	+ 8.2	12,188
Chakrātā	478	2	39	51,101	107	+ 0.8	393
District total	1,209	6	416	178,195	147	+ 6.0	12,581

Of the total population, 83 per cent. are Hindus, 14 per cent. Musalmāns, 1.8 per cent. Christians, and 0.8 per cent. Aryas. Western Hindī is the principal language in the valley,

[1] *Epigraphia Indica*, vol. i, p. 10.

while almost the whole of the people in the hills speak the Jaunsārī dialect of Central Pahārī.

Castes and occupations.

The most numerous caste is that of Rājputs, who number 32,000, or more than one-fifth of the total number of Hindus (148,000), which is a high percentage for this caste. Chamārs (leather-workers and labourers) number 21,000; Brāhmans, 17,000; and Korīs (weavers and labourers), 12,000. Out of a Muhammadan population of 25,000, Shaikhs number 8,000 and Pathāns 5,000. In the hill tracts of the District, Brāhmans and Rājputs are divided, as in Kumaun, into the Khas branch and the ordinary divisions of these castes, the former being looked on as aboriginal. Among the Khas Rājputs polyandry is commonly practised. Of other castes peculiar to the District may be mentioned the Bājgīs (singers and musicians), 6,000; and the Doms (aborigines, now labourers), 8,000.

Christian missions.

The number of native Christians is 1,305, while there are 1,829 Europeans and Eurasians. The principal missions, with the dates of their foundation, are those of the American Reformed Presbyterian Church at Dehra (1852) and Rājpur (1868); the Church Missionary Society at Annfield, with two out-stations (1857); and the Methodist Episcopal Church at Mussoorie, with six out-stations (1859). Nearly half the native Christians belong to the last named.

General agricultural conditions.

In the hills, tillage is chiefly confined to the valleys or to terraces on the mountain slopes artificially irrigated by dams and canals. In the valley agriculture is carried on much as it is in the plains; but the Dūn cultivator, except in the Dehra plateau, is wanting in energy and skill. His cattle are weak, the holdings are small, and methods rude. There is some fine land in the eastern Dūn; but the valley as a whole is not a good wheat country, and rains crops and crops with long tap-roots do best. The surface soil is, as a rule, shallow, and below it lies a gravel subsoil which soon drains away the moisture from the upper layers. The ordinary crop seasons in the valley are the same as in the plains, but harvest is a month or two later.

Chief agricultural statistics and principal crops.

The main agricultural statistics for 1903-4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.	Forests.
Dehra	731	122	35	139	278
Chakrātā	478	31	2	7	142
Total	1,209	153	37	146	420

The staple food-grains are wheat, rice, *maruā*, and barley; the areas under which in 1903–4 were 54, 32, 22, and 16 square miles. Maize, gram, and *jowār* are also important food-crops, with a total area of 15 square miles. Oilseeds were grown on 10 square miles, and tea plantations covered 8 square miles. In the hills, ginger, turmeric, and chillies are valuable crops.

Improvements in agricultural practice.

The District does not produce any surplus of grain for export, and there is in fact a considerable import, especially since the growth of Mussoorie and the extension of the railway. Dams made of wooden frames filled with boulders have been successfully used to prevent erosion by torrents. The tea industry is not very flourishing, owing to the loss of the market in Afghānistān and Central Asia. Experiments in the cultivation of rhea fibre and in sericulture have not proved a success, and grants of waste land to European settlers have not been remunerative, largely owing to the difficulty of obtaining labour. Very few advances are taken under the Agriculturists' Loans Act; the amount lent in 1902 was only Rs. 5,000, and usually there are no loans. No money has been borrowed under the Land Improvement Loans Act.

Cattle, horses, sheep, and goats.

There are no special breeds of cattle or horses. Cattle-breeding has been tried without success, and an attempt to improve the breed of sheep also failed. Goats are kept in very large numbers, and are penned on the land in the hills to supply manure. Owing to its cool climate, Dehra is a favourite place for keeping racing stables during the hot season.

Irrigation.

Of the total cultivated area, 22 square miles are irrigated from Government canals and 15 from rivers and small reservoirs made by damming streams. There are only twenty-nine wells in the whole District, and the canals supply drinking-water as well as irrigation. The canals are small works, being improvements and restorations of watercourses made long before British rule. The principal channels are the Bījāpur, drawn from the lesser Tons, a small stream in the centre of the valley; the Katāpāthar, from the Jumna; and the Rājpur, Kalanga, and Jākhan, from streams in the eastern Dūn. The first of these was made as early as 1839. Till 1903 these canals were supplied by means of temporary dams, but permanent heads have now been constructed. Owing to the steep slopes and nature of the soil, erosion and percolation made masonry channels necessary; but the slopes are being reduced by providing falls, and the cost of extensions will be smaller. The total capital expenditure to the end of 1903–4 was 8 lakhs; and in that year the gross income

was 1·1 lakhs, and the expenditure Rs. 70,000, showing a profit of 4·7 per cent. Wheat and rice are the main crops irrigated. Irrigation in the hills is carried on by small channels taken out of rivers at the head of a valley, which distribute the water to terraces.

Forests. The 'reserved' forests in Dehra Dūn cover an area of 420 square miles. They form two divisions, each in charge of a Deputy-Conservator: the Dehra Dūn division, 278 square miles, with head-quarters at Dehra; and the Jaunsār division, 142 square miles, with head-quarters at Chakrātā. In the Dūn proper the forests are largely *sāl*, with *haldu* (*Adina cordifolia*), *āonla* (*Phyllanthus Emblica*), *bahera* (*Terminalia bellerica*), and many other species. On stiff clay soil *sain* (*Terminalia, tomentosa*) and *jāmun* (*Eugenia Jambolana*) are found. Bamboos are rare here, but are found on the northern slopes of the Siwāliks. Near the rivers *khair* (*Acacia Catechu*) and *shīsham* (*Dalbergia Sissoo*) are common. On the ridges and slopes of the Siwāliks the long-leaved pine, *sāler* (*Boswellia thurifera*), and the *khat-bilāwa* (*Buchanania latifolia*) are common. In Jaunsār valuable timber trees, such as *chīr* (*Pinus longifolia*), *kail* (*Pinus excelsa*), and *deodār*, are the principal forest trees. Timber is extracted and transported to the Jumna by means of long slides made of planks, which are kept wet. The timber is then formed into rafts and floated down to Delhi. Among the minor forest products may be mentioned resin and colophony. In 1903 the total forest revenue in these two divisions, which also include some forests leased from the Tehrī, Sirmūr, and other Hill States, amounted to 7·5 lakhs, and the expenditure to 3·1 lakhs.

Minerals. The geology of the District has already been described. The minerals have not yet proved to be of any economic value. The stone of the Siwāliks is of little use for building. Limestone is plentiful, and lime is made as required.

Art and manufactures. There are two breweries at Mussoorie which employed 131 hands in 1903, and one at Chakrātā which employed 30, the total production being 684,000 gallons. Glass-blowing from European glass has been practised for some time, and in 1902 a small glass factory was opened at Rājpur. There are no other manufactures except a little cotton-weaving.

Commerce. The exports to the plains include timber, bamboos, lime, charcoal, rice, and tea. The production of tea in 1903 amounted to 1·6 million lb., or nearly 78 per cent. of the total produce of the United Provinces. In return the Dūn imports hardware, cotton cloth, blankets, salt, sugar, grain, tobacco, and spices.

All these articles pass on to the hills; while the return trade consists of rice, ginger, turmeric, red pepper, honey, wax, lac, gum, resin, and other forest produce.

Railways and roads. The Hardwār-Dehra Railway, which was opened in 1900, is a continuation of the branch line of the Oudh and Rohilkhand Railway from Laksar on the main line to Hardwār. It enters the District at the south-east corner, passes up the eastern Dūn, and terminates at Dehra, the total length being 48 miles.

There are two main lines of metalled road communicating with the plains. One leads from Sahāranpur to Chakrātā, crossing the Siwāliks by the Timlī pass, and then traversing the western Dūn; it is purely a military route. The other was the main route from the valley to the plains before the opening of the railway. It pierced the Siwāliks by the Mohan pass, and crossed the centre of the valley to Dehra and thence to Rājpur at the foot of the hills below Mussoorie. A third metalled road from Dehra joins the Sahāranpur-Chakrātā road at Fatehpur. The eastern Dūn is very badly provided with roads, and for a great portion of the rainy season the northern part is cut off from the rest of the District.

The total length of metalled roads is 54 miles, of which all but 11 miles are maintained by the Public Works department. There are 272 miles of unmetalled roads, of which 200 are maintained by the Public Works department at the cost of the District board. Avenues of trees are maintained on 12 miles.

District subdivisions and staff. The chief administrative officer of Dehra Dūn is called the Superintendent. He is usually assisted by two members of the Indian Civil Service, called Assistant Superintendents, and one Deputy Collector recruited in India. There is a *tahsīldār* at Dehra and another at Chakrātā. The District staff in other departments consists of the usual officers; but there is also a Cantonment Magistrate at Chakrātā, and the station staff officers at Dehra Dūn and Landour are *ex officio* Cantonment Magistrates. DEHRA is the head-quarters of a Conservator of the Forest department, and also of several Imperial departments.

Civil justice and crime. The District has a special organization of civil courts. The Superintendent is a Civil Judge for Jaunsār-Bāwar, and the Cantonment Magistrate of Chakrātā has the powers of a Judge of a Small Cause Court in the same area. One of the Assistant Superintendents has the powers of a Subordinate Judge and Judge of a Small Cause Court in the rest of the District, which belongs to the Civil Judgeship and Sessions division of

Sahāranpur. Crime is not very important, the principal offences being ordinary theft and burglary. The Chakrātā *tahsīl* is particularly free from crime.

Land revenue administration.

The settlement of the land revenue in the valley has always been distinct from that of Chakrātā. Conditions in the former resembled those of the plains, while in the latter the Kumaun system was in force.

The Dūn.

After the Dūn was annexed in 1815, the Government demand was calculated at the time of harvest by an appraisement of the crop, one-half or one-third and in some cases one-fourth being taken. In 1816 a new settlement was made for four years, based on the average collections of the previous two years. This was followed by two quinquennial settlements, in the second of which the revenue-payers were for the first time recognized as owning the land instead of being merely farmers or tenants-at-will. In 1831 the fourth settlement was made for ten years and the recently-created rights were swept away. The cultivators received a grant of proprietary rights, and a few of the late *zamīndārs* whose ancestors had held the same position were appointed *mukaddams* or managers to collect the revenue and pay it over to Government less ten per cent. commission. The *mukaddams* were regarded as officials and were liable to removal for misconduct. The cultivators in many cases did not realize their new position and continued to pay rent as before. In 1837–8, however, the grant of land on more favourable terms to European settlers caused a rise in the value of land, and the system led to difficulties. The Dūn was surveyed in 1838–9, the boundaries of all villages were determined, and one-fourth of the cultivable land included in each was assigned to the cultivators free for grazing, while the remainder was offered first to cultivators and then to other applicants as grants on indefinite terms. In 1840 the Superintendent proposed another *ryotwāri* settlement for twenty years, but it was not sanctioned. Both of these settlements were made at a uniform rate per acre, the distribution being left to the people; but the absence of joint responsibility prevented this from being done fairly, and there were other complaints. Accordingly, in 1845 the preparation of a regular record-of-rights was commenced, assessments were lowered, tenures inquired into, and *zamīndāri* rights conferred on the old revenue-payers where their claims were proved. The revision was completed in 1848, and re-established the *zamīndāri* system. The seventh settlement was made between 1860 and 1863. It was revised

in 1865 with a view to making it permanent; but this project was never carried out, and the settlement expired in 1886, when a fresh settlement was made for ten years. The revenue then assessed varied in different tracts from 13 annas to Rs. 1-14-0 per cultivated acre, the average being R. 1. The demand amounted to 45 per cent. of the recorded 'assets.'

In Chakrātā the conditions have been totally different. Chakrātā. Five short-term settlements were made for periods of two, three, or five years up to 1834 in the following manner. The total assessment on the whole *tahsīl* was fixed from a consideration of the previous demand, and a rough idea of the existing circumstances of the people and their business. This was announced to the *chauntra* or four representatives of the people. The *chauntra* then discussed the settlement with the *siānās* or headmen of the thirty-five *khatts* into which the *pargana* was divided, and these distributed the demand over villages in consultation with the village *siānās*. A sixth settlement on the same principle was made in 1834, but it broke down owing to quarrels between the *chauntra* and the subordinate officials. The new settlement sanctioned for ten years from 1839 accordingly set aside the *chauntra* completely, and treated each *khatt* as a *bhaiyāchārā mahāl*[1] in the plains. The assessment was based on a careful inquiry into the comparative resources of each village, and the revenue was fixed for each *khatt*, the *siānā* being responsible for the collection and distributing the fixed revenue annually. The cultivated lands are not the only basis of distribution; the number of cattle, working hands, and the general wealth of each shareholder are also considered. A plane-table measurement was first made at the next revision in 1860; but there are no fixed village boundaries. The settlement of 1860 lasted for about ten years and was followed by another for the same term. In 1884 this was revised and extended for twenty years.

The total receipts from land revenue and from all sources have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . . .	62	85	92	92
Total revenue . . .	2,82	3,31	4,43	5,15

The District contains two municipalities, DEHRA and MUSSOORIE, and two towns administered under Act XX of 1856, RĀJPUR and KĀLSĪ. The total income of the District board Local self-government.

[1] See Land Revenue in article on UNITED PROVINCES.

in 1903-4 was Rs. 61,000, of which only Rs. 5,400 came from local rates, the greater part of the income being a grant from Government. The expenditure was Rs. 62,000, of which Rs. 30,000 was spent on public works.

Police and jails. The District Superintendent of police has a force of 3 inspectors, 50 subordinate officers, and 178 constables. Municipal police number 59, town police 7, and rural and road police 10. There are 7 police stations, and one jail with a daily average population in 1903 of 62 males and one female.

Education. In 1901 the proportion of persons who could read and write was 7·1 per cent. (10·7 males and 2 females). This is higher than in any other District in the Provinces, and is partly due to the comparatively large number of Europeans and Eurasians who have settled here. The number of public schools increased from 39 with 1,240 pupils in 1880-1 to 47 with 2,404 pupils in 1900-1. In 1903-4 there were 60 such institutions with 2,854 pupils, of whom 311 were girls, besides 13 private establishments with 289 pupils. One school is managed by Government and 41 by the District and municipal boards. The total cost was Rs. 43,000, of which Rs. 16,000 was met from Local funds and Rs. 10,000 from fees. These were all schools for natives; but there were also 14 private schools for Europeans and Eurasians at Mussoorie, 4 of which contained college classes. The total number of children under instruction in these schools was 1,200.

Hospitals and dispensaries. In 1903 there were 11 hospitals and dispensaries, with accommodation for 78 in-patients. The number of cases treated was 60,779, of whom 1,435 were in-patients, and 2,733 operations were performed. The income was Rs. 14,000, chiefly from Local funds.

Vaccination. The number of persons successfully vaccinated in 1903-4 was 7,300, or 40·1 per 1,000 of the total population. Vaccination is compulsory only in the municipalities and cantonments.

[G. R. C. Williams, *Memoir of Dehra Dūn* (1874); F. Baker, *Settlement Report* (1886).]

Dehra Tahsīl.—*Tahsīl* in Dehra Dūn District, United Provinces, lying between 29° 57′ and 30° 32′ N. and 77° 35′ and 78° 18′ E., with an area of 731 square miles. It is divided into two *parganas*, called the Eastern and Western Dūn, and includes the whole of the valley between the Himālayas and Siwāliks from the Jumna to the Ganges, stretching up to the

crest of the Siwāliks on the south and the outer range of the Himālayas on the north. The population rose from 117,438 in 1891 to 127,094 in 1901. It contains four towns, DEHRA (population, 28,095), the District and *tahsīl* head-quarters, MUSSOORIE, with the adjoining cantonment of LANDOUR (6,461), and RĀJPUR (2,900); and 377 villages. In 1903–4 the demand for land revenue was Rs. 69,000, and for cesses Rs. 13,000. The population is sparse, 174 persons per square mile, as there is a large forest area, the area under cultivation being only 122 square miles, of which 35 are irrigated. There are fifteen large tea gardens in the *tahsīl*, besides a number of smaller estates.

Chakrātā Tahsīl (*Chakrautā*).—Northern *tahsīl* of Dehra Dūn District, United Provinces, better known under its earlier name of Jaunsār-Bāwar. It lies between 30° 31′ and 31° 2′ N. and 77° 42′ and 78° 5′ E., and forms a roughly elliptical mass of mountains, stretching due north from the outer range of the Himālayas. The southern half lies between the Tons (northern) and Jumna rivers. The whole tract is so hilly that in its entire area of 478 square miles scarcely a single level space of a hundred yards occurs anywhere, and only 31 square miles are cultivated. The population rose from 50,697 in 1891 to 51,101 in 1901. The *tahsīl* contains two towns: the cantonment of CHAKRĀTĀ (population, 1,250), and the small town of KĀLSĪ (760), which is administered under Act XX of 1856. There are thirty-nine *khatts* or revenue divisions, and several hundred inhabited sites. In 1903–4 the demand for land revenue was Rs. 23,400, and for cesses Rs. 3,800. The low density of population, only 107 persons per square mile, is usual in the Himālayan tract. The rainfall at Chakrātā averages 80 inches, being slightly lower than in the rest of the District. The inhabitants resemble those of the neighbouring Himālayan tracts, and differ from the people in the plains. Polyandry is common. The Jaunsār-Bāwar Forest division has an area of 142 square miles, and is managed jointly with 153 square miles of forests leased from the neighbouring Native States. The forests contain very valuable timber trees, especially *deodār* and various kinds of pines. Railway sleepers and other timber are transported to the Jumna by an ingenious system of slides, and then floated down to Delhi. The provisions of the Excise Act of 1896 are relaxed, except in the towns of Chakrātā and Kālsī, and the inhabitants are allowed to make spirits and fermented liquor for their own use. There is also a small cultivation of

poppy which is not controlled, but this privilege will expire with the present settlement.

Chakrātā Town (*Chakrautā*).—Cantonment and *tahsīl* head-quarters in Dehra Dūn District, United Provinces, situated in 30° 42′ N. and 77° 52′ E., 25 miles from Kālsī and 40 miles west of Mussoorie along the hills; at an elevation of 6,885 feet above the sea. The cold-season population has varied since 1872 between 1,200 and 1,500, and was 1,250 in 1901. The present garrison consists of a regiment of British infantry; and there is a standing camp at Kailāna, a short distance east of Chakrātā, where details from various regiments are stationed. In September, 1900, the troops numbered 1,716 with women and children, and the total population was 5,417. The cantonment was founded in 1866, and first occupied in 1869. A fine cart-road, 77 miles long, connects it with Sahāranpur, a branch from which passes along the valley of the Dūn to Dehra. The income and expenditure of the cantonment fund are about Rs. 16,000 annually. A brewery is established here, the number of hands employed in 1903 being 30, and the out-turn 88,000 gallons.

Dehra Town.—Head-quarters of the District and *tahsīl* of the same name, in the United Provinces, situated in 30° 19′ N. and 78° 2′ E., at an elevation of 2,300 feet above the sea. It is the terminus of the Hardwār-Dehra (Company) Railway, which meets a branch of the Oudh and Rohilkhand, and it also lies on the main road from the plains to the hill station of Mussoorie. The population, including both municipality and cantonment, has increased from 7,316 in 1872 to 18,959 in 1881, 25,684 in 1891, and 28,095 in 1901. In 1901 Hindus numbered 18,246, Muhammadans 8,047, and Christians 1,100, most of whom were Europeans.

The town was founded by Gurū Rām Rai, the originator of the Udāsī sect of ascetics, early in the eighteenth century, after his failure to obtain the recognition of his claims to be made Gurū of the Sikhs. The temple of the Gurū, built in 1699, consists of a central block, designed on the model of the emperor Jahāngīr's tomb, in which the Gurū's bed is still preserved, and smaller monuments at the corners in memory of his wives. These are of brick, plastered over and pointed. The plaster of the large outer gateway has recently been adorned with paintings, which present a curious mixture of religious and historical subjects and portraits, including one of a former Superintendent of the Dūn. These are the work of a self-taught local mason and are of fair artistic merit. Three reser-

voirs, one being 230 feet long and 184 feet wide, are attached to the temple.

Dehra is the cold-season head-quarters of the District staff, most of the members of which in the hot season spend part of each month at Mussoorie. An Assistant Superintendent is permanently posted here. It is also the head-quarters of the Trigonometrical and Forest Surveys of India, and of the Agricultural Chemist and Mycologist to the Government of India. The finest public building is the Forest School, which contains a magnificent collection of forest products and models of mechanical devices used in forestry, besides a natural history museum. The Director and a staff of professors train the students, and the school supplies subordinate forest officials to all parts of India. An institute for research into all matters relating to sylviculture and the administration and exploiting of forests is now being organized in connexion with the school. The members of the Imperial Cadet Corps reside at Dehra during their period of training, and in the hot season the Viceroy's body-guard and private stables are kept here. The ex-Amīr of Afghānistān has a house at Dehra, and the former minister of Nepāl lives at Jharīpānī.

The municipality, which was established in 1867, had a population of 24,039 in 1901, and the receipts and expenditure from 1891 to 1901 averaged Rs. 28,000 and Rs. 33,000. A loan of Rs. 91,000 for water-works, made in 1895–6, is excluded from the receipts. In 1903–4 the figures were Rs. 59,000 and Rs. 55,000. The greater part of the income is obtained from octroi (Rs. 41,000), which has recently been imposed in place of a house tax. The water-supply is derived partly from Kolūkhet in the Himālayas by means of a pipe several miles long, and partly from Nālāpāni on the KALANGA Hill. An increase in the supply is under consideration, while a complete system of surface drainage is being constructed.

There are no manufactures in Dehra, and the population chiefly depends on the position of the town as a dépôt for the trade with the hills, and as the head-quarters of the District. In 1904 Dehra contained 13 schools with 1,100 pupils.

The cantonment is the head-quarters of two battalions of Gurkhas, and has a total population of 4,056. In 1903–4 the income was Rs. 2,300 and the expenditure Rs. 1,500.

Kalanga.—Hill in Dehra Dūn District, United Provinces, situated in 30° 20′ N. and 78° 5′ E. A fort was hastily thrown

up here by the Gurkhas on the outbreak of the war of 1814. It is perched on a low spur of the Himālayas, $3\frac{1}{2}$ miles north-east of Dehra, and was attacked in 1815 by General Gillespie, who fell while leading the storming party; for a time it was desperately defended, but the enemy evacuated it after a second assault, and the British demolished it shortly after. A plain white stone monument commemorates those who fell at the taking of the fort. On the slope of the hill is a village called Nālāpāni, near which is a celebrated spring that forms part of the water-supply of Dehra.

Kālsī.—Town in the Chakrātā *tahsīl* of Dehra Dūn District, United Provinces, situated in 30° 32′ N. and 77° 51′ E., close to the confluence of the Jumna and the Tons, on the military road from Sahāranpur to Chakrātā, 52 miles from the former and 25 miles from the latter. Three miles away the road crosses the Jumna by an iron girder-bridge. Population (1901), 760. The place has declined owing to the transfer of the *tahsīl* head-quarters to Chakrātā. Kālsī is administered under Act XX of 1856, the annual income and expenditure amounting to Rs. 300 or Rs. 400. It is chiefly remarkable for a large quartz boulder in the neighbourhood on which are sculptured the celebrated edicts of Asoka, one of which gives the names of contemporary kings in Western Asia, Greece, and Egypt[1].

Landour (*Landhaur*).—Hill cantonment and sanitarium in Dehra Dūn District, United Provinces, situated in 30° 27′ N. and 78° 7′ E. Population in the cold season (1901), 1,720. In September, 1900, the population was 3,711, of whom 1,516 were Christians. A convalescent station for European soldiers was established in 1827, the year after the foundation of MUSSOORIE, which adjoins Landour. The cantonment contains a large school for Europeans and Eurasians, with college classes.

Mussoorie (*Mansūrī*).—Municipality and sanitarium in Dehra Dūn District, United Provinces, situated in 30° 27′ N. and 78° 5′ E. It stands on a ridge of the Outer Himālayas at a height of 6,000 to 7,500 feet above sea-level, among beautiful and varied mountain scenery, and forms practically one town with LANDOUR, where there is a convalescent dépôt for troops. The population of the municipality and cantonment in the cold season has varied from 2,753 in 1872 to 4,852 in 1881, 7,175 in 1891, and 6,461 in 1901. In September, 1900, the population within municipal limits was 14,689, of whom 7,420

[1] *Corpus Inscriptionum Indicarum*, vol. i, pp. 12 and 117.

were Hindus, 3,424 Musalmāns, and 3,660 Christians (mostly Europeans and Eurasians). The cantonment population was 3,711, of whom 1,516 were Christians.

Mussoorie became a sanitarium in 1826, the year before Landour was made a convalescent dépôt for troops, and has gradually become one of the most popular health resorts in Upper India. Up to 1900 it was reached by road from Sahāranpur, 58 miles away, but the opening of the Hardwār-Dehra Railway has made it more accessible. Dehra is about 7 miles from RĀJPUR, at the foot of the hills, from which Mussoorie is reached by a bridle-path 7 miles long or by a cart-road of 14 miles. During the hot season the members of the District staff reside for part of each month at Mussoorie, and it is the summer headquarters of field parties of the Trigonometrical Survey of India. The Mussoorie municipality was constituted in 1850. During the ten years ending 1901 the receipts averaged Rs. 71,800, besides loans from Government, amounting to Rs. 1,16,000, for water-works and sewerage. In 1903–4 the receipts were 1·6 lakhs, including tax on houses and land (Rs. 32,000), tolls (Rs. 50,000), conservancy tax (Rs. 19,000); and the expenditure was 1·4 lakhs, including conservancy (Rs. 28,000), water-supply (Rs. 13,000), general administration (Rs. 22,000), roads (Rs. 26,000), interest and debt (Rs. 7,000). The Bhilārū sewage shoot for the disposal of refuse is the most important sanitary work, carried out recently at a cost of Rs. 70,000; schemes for an improved water-supply and electric lighting are under consideration.

Mussoorie exists chiefly as a health resort, and the only manufacture is that of beer at two breweries, which employed 131 men in 1903 and made nearly half a million gallons of beer. It is of great importance as an educational centre for European and Eurasian children; and there are nine schools for boys and five for girls of these classes, with about 600 boarders and 200 day-scholars, besides a school at Landour. A Roman Catholic cathedral is under construction.

Rājpur.—Town in Dehra Dūn District, United Provinces, situated in 30° 24′ N. and 78° 6′ E., at the foot of the Himālayas on the main road to Mussoorie, being 7 miles from that place and 7 miles from Dehra. Population (1901), 2,900. The place is chiefly of importance as a stage on the journey to Mussoorie, and it is administered under Act XX of 1856. Pure drinking-water is supplied through pipes from the mountains. There are three hotels, a police station, a post office, and a dispensary. In 1902 a small glass factory was

opened here. Glass is made from quartz, limestone, and soda, the two first materials being found in the neighbourhood. Four European workmen and forty-four natives were employed in 1903.

Boundaries, configuration, and hill and river systems.

Sahāranpur District.—District in the Meerut Division of the United Provinces, lying between 29° 34′ and 30° 24′ N. and 77° 7′ and 78° 12′ E., with an area of 2,228 square miles. It is bounded on the north by the Siwālik Hills, which separate it from Dehra Dūn District; on the east by the Ganges, dividing it from Bijnor District; on the south by Muzaffarnagar District; and on the west by the river Jumna, separating it from the Punjab Districts of Karnāl and Ambāla. Sahāranpur forms the most northerly portion of the DOĀB or alluvial plain between the Ganges and Jumna. On its northern boundary the Siwāliks rise abruptly, pierced by several passes and crowned by jagged summits which often assume the most fantastic shapes. At their base stretches a wild submontane tract (*ghār*), overgrown with forest or jungle, and scored by the rocky beds of innumerable mountain streams (*raos*). South of this forest belt lies the plain, an elevated upland tract flanked on both sides by the broad alluvial plains which lie in the valleys of the Jumna and Ganges. Besides the two great rivers there are many smaller streams. Excluding arms of the Jumna and Ganges, these fall into two classes: those which are formed by the junction of the torrent-beds issuing from the Siwāliks, and those which rise in various depressions and swamps. Though the *raos* are sometimes dry during the greater part of the year, their channels lower down gradually assume the form of rivers, and contain water even in the hot season. Chief among these rivers may be mentioned the HINDAN, which rises in the centre of the Siwāliks and after crossing several Districts joins the Jumna; and the SOLĀNI, lying farther to the east and falling into the Ganges in Muzaffarnagar District.

Geology.

The geology of the SIWĀLIKS has been dealt with in the description of those hills. They consist of three main divisions: (1) the upper Siwālik conglomerates, sands, and clays; (2) the middle Siwālik sand-rock; and (3) the lower Siwālik or Nāhan sandstone. The middle and upper rock stages have yielded a magnificent series of fossils, chiefly mammalian[1]. The *ghār* or belt below the Siwāliks consists of débris from the hills with a shallow light soil resting on boulders. The prevailing soil

[1] Falconer and Cantley, *Fauna Antiqua Sivalensis*; Lydekker and Foote, *Palaeontologia Indica*, series X.

in the plain is a productive loam, which stiffens into clay in depressions, while along the crests of slopes it merges into sand.

Botany. The natural flora of the District forms two groups: the luxuriant tropical forest trees and plants of the Siwālik slopes, and the products of the plains which resemble those of other Districts. The botanical gardens at Sahāranpur form an important centre for the distribution of plants, and are also the head-quarters of the Botanical Survey of Northern India. The District is noted for the production of excellent fruit of European varieties, especially peaches.

Fauna. Tigers are still fairly numerous in the Siwālik and sub-montane forests, and are found more rarely in the Ganges *khādar*. Leopards, wolves, and wild hog are common, and the lynx, hyena, and sloth bear are also found. Wild elephants occur in the Siwāliks. Deer of various sorts, the *sāmbar* or *jarau*, *chītal* or spotted deer, *kākar* or barking-deer, and *pārha* or hog deer are also found, while the four-horned antelope and the *gural* haunt the Siwāliks. The *karait* and cobra are the commonest poisonous snakes, while the Siwālik python grows to an immense size. The mahseer affords good sport in the Ganges, Jumna, and in the canals, and other kinds of fish are common.

Climate and temperature. The climate is the same as that of the United Provinces generally, modified by the northern position of the District and the cool breezes from the neighbouring hills. The cold season arrives earlier, and lasts longer, than in the lower Districts; but the summer months are tropical in their extreme heat. The tract at the foot of the hills was very unhealthy before the jungle was cleared; but the climate is now comparatively good, except in the actual forest, which is still feverish during and immediately after the rains. Malarial fever is common throughout the District.

Rainfall. The rainfall varies in different parts of the District and is heaviest near the hills, where no recording station exists. The annual average for the whole District is about 37 inches; but it ranges from 33 inches at Nakūr in the south-west to 43 at Roorkee in the north-east.

History. The portion of the Doāb in which Sahāranpur is situated was probably one of the first regions of Upper India occupied by the Aryan colonists, as they spread eastward from their original settlement in the Punjab. But the legends of the Mahābhārata centre around the city of Hastināpur, in the neighbouring District of Meerut; and it is not till the fourteenth century of our era that we learn any historical details

with regard to Sahāranpur itself. The town was founded in the reign of Muhammad bin Tughlak, about the year 1340, and derived its name from a Musalmān saint, Shāh Haran Chishtī, whose shrine is still an object of attraction to Muhammadan devotees.

At the close of the century the surrounding country was exposed to the ravages of Tīmūr, who passed through Sahāranpur on his return from the sack of Delhi, and subjected the inhabitants to all the horrors of a Mongol invasion. In the year 1414 the tract was conferred by Sultān Saiyid Khizr Khān on Saiyid Salīm; and in 1526 Bābar marched across it on his way to Pānīpat. A few Mughal colonies still trace their origin to his followers. A year later the town of Gangoh was founded by the zealous missionary, Abdul Kuddūs, whose efforts were the means of converting to the faith of Islām many of his Rājput and Gūjar neighbours. His descendants ruled the District until the reign of Akbar, and were very influential in strengthening the Musalmān element by their constant zeal in proselytizing. During the Augustan age of the Mughal empire Sahāranpur was a favourite summer resort of the court and the nobles, who were attracted alike by the coolness of its climate and the facilities which it offered for sport. The famous empress, Nūr Mahal, the consort of Jahāngīr, had a palace in the village which still perpetuates her memory by its name of Nūrnagar; and under Shāh Jahān the royal hunting seat of Bādshāh Mahal was erected by Alī Mardān Khān, the projector of the Eastern Jumna Canal.. The canal was permitted to fall into disuse during the long decline of the Mughal empire, and it was never of much practical utility until the establishment of British rule.

After the death of Aurangzeb, this region suffered, like the rest of Upper India, from the constant inroads of warlike tribes and the domestic feuds of its own princes. The first incursion of the Sikhs took place in 1709, under the weakened hold of Bahādur Shāh; and for eight successive years their wild hordes kept pouring ceaselessly into the Doāb, repulsed time after time, yet ever returning in greater numbers, to massacre the hated Muhammadans and turn their territory into a wilderness. The Sikhs did not even confine their barbarities to their Musalmān foes, but murdered and pillaged the Hindu community with equal violence. In 1716, however, the Mughal court mustered strength enough to repel the invaders for a time; and it was not until the utter decay of all authority that the Sikhs once more appeared upon the scene.

Meanwhile the Upper Doāb passed into the hands of the Saiyid brothers of Bārha, whose rule was more intimately connected with the neighbouring District of MUZAFFARNAGAR. On their fall in 1721 their possessions were conferred upon various favourites in turn, until, in 1754, they were granted by Ahmad Shāh Durrāni to Najīb Khān, a Rohilla leader, as a reward for his services at the battle of Kotila. This energetic ruler made the best of his advantages, and before his death (1770) had extended his dominions to the north of the Siwāliks on one side, and as far as Meerut on the other. But the close of his rule was disturbed by incursions of the two great aggressive races from opposite quarters, the Sikhs and the Marāthās. Najīb Khān handed down his authority to his son, Zābita Khān, who at first revolted from the feeble court of Delhi; but on being conquered by Marāthā aid was glad to receive back his fief through the kind offices of his former enemies, then supreme in the councils of the empire. During the remainder of his life, Zābita Khān was continually engaged in repelling the attacks of the Sikhs, who could never forgive him for his reconciliation with the imperial party. Under his son, Ghulām Kādir (1785), the District enjoyed comparative tranquillity. The Sikhs were firmly held in check, and a strong government was established over the native chieftains.

But upon the death of its last Rohilla prince, who blinded the emperor Shāh Alam II, and was mutilated and killed by Sindhia in 1788, the country fell into the hands of the Marāthās, and remained in their possession until the British conquest. Their rule was very precarious, owing to the perpetual raids made by the Sikhs; and they were at one time compelled to call in the aid of George Thomas, the daring military adventurer, who afterwards established an independent government in Hariāna. The country remained practically in the hands of the Sikhs, who levied blackmail under the pretence of collecting revenue.

After the fall of ALĪGARH and the capture of Delhi (1803), a British force was dispatched to reduce Sahāranpur. Here, for a time, a double warfare was kept up against the Marāthās on one side and the Sikhs on the other. The latter were defeated in the indecisive battle of Charaon (November 24, 1804), but still continued their irregular raids for some years. Organization, however, was quietly pushed forward; and the District enjoyed a short season of comparative tranquillity, until the death of the largest landowner, Rām Dayāl Sing, in 1813. The resumption of his immense estates gave rise to a Gūjar

revolt, which was put down before it had assumed serious dimensions. A more dangerous disturbance took place in 1824; a confederacy on a large scale was planned among the native chiefs, and a rising of the whole Doāb might have occurred had not the premature eagerness of the rebels disclosed their designs. As it was, the revolt was only suppressed by a sanguinary battle, which ended in the total defeat of the insurgents and the fall of their ringleaders.

From that period till the Mutiny, no events of importance disturbed the quiet course of civil administration in Sahāranpur. News of the rising at MEERUT was received early in May, 1857, and the European women and children were immediately despatched to the hills. Measures were taken for the defence of the city, and a garrison of European civil servants established themselves in the Magistrate's house. The District soon broke out into irregular rebellion; but the turbulent spirit showed itself rather in the form of internecine quarrels among the native leaders than of any settled opposition to British government. Old feuds sprang up anew; villages returned to their ancient enmities; bankers were robbed, and money-lenders pillaged; yet the local officers continued to exercise many of their functions, and to punish the chief offenders by ordinary legal process. On the 2nd of June a portion of the Native Infantry at Sahāranpur city mutinied and fired upon their officers, but without effect. Shortly afterwards a small body of Gurkhas arrived, by whose assistance order was partially restored. As early as December, 1857, it was found practicable to proceed with the regular assessment of the District, and the population appeared to be civil and respectful. In fact—thanks to the energy of its District officers—the Mutiny in Sahāranpur was merely an outbreak of the old predatory anarchy, which had not yet been extirpated by our industrial régime.

Archaeology.

When the Eastern Jumna Canal was being excavated in 1834 the site of an old town was discovered, 17 feet below the surface, at Behat, 18 miles from Sahāranpur city[1]. Coins and other remains prove its occupation in the Buddhist period. The three towns of Hardwār, Kankhal, and Māyāpur on the Ganges have been sacred places of the Hindus for countless years. Muhammadan rule is commemorated by tombs and mosques at several places, among which may be mentioned MANGLAUR, GANGOH, and Faizābād. SARSĀWĀ is an ancient town, with a lofty mound, once a strong brick fort. The District contains two celebrated Muhammadan shrines: that of

[1] *Journal, Asiatic Society of Bengal*, vol. iii, pp. 43 and 221.

Pīrān Kaliār, a few miles from Roorkee; and the birthplace of Gūgā or Zāhir Pīr, at Sarsāwā. Both are also reverenced by Hindus, and the cult of the latter is popular throughout Northern India.

In 1901 there were 18 towns and 1,628 villages. The population at each Census in the last thirty years has been: (1872) 884,017, (1881) 979,544, (1891) 1,001,280, and (1901) 1,045,230. The District is divided into four *tahsīls*—SAHĀRANPUR, DEOBAND, ROORKEE, and NAKŪR—the head-quarters of each bearing the same name. The chief towns are the municipalities of SAHĀRANPUR, the head-quarters of the District, HARDWĀR, and DEOBAND. The following table shows the principal statistics of the District in 1901:— The people.

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Sahāranpur	619	1	497	334,681	541	+ 7·1	8,179
Deoband	385	3	311	220,152	572	+ 7·1	3,696
Roorkee	796	6	426	286,903	360	− 1·2	9,529
Nakūr	428	8	394	203,494	475	+ 5·6	4,385
District total	2,228	18	1,628	1,045,230	469	+ 4·4	25,789

Hindus form 65 per cent. of the total, and Muhammadans 34 per cent., the latter being a very high proportion, peculiar to the northern part of the plains. The District supports 469 persons to the square mile, and the density is thus slightly higher than the average of the Provinces (445). Between 1891 and 1901 the population increased by 4·4 per cent., the famine of 1896–7 having had little effect. The principal language is Western Hindī, which is spoken by more than 99 per cent.

The most numerous Hindu caste is that of the Chamārs (leather-workers and labourers), 204,000. Brāhmans number 43,000; Rājputs, 46,000; and Baniās, 28,000. Money-lenders have acquired a very large share in the land of the District. The best cultivating castes are the Jāts (15,000), Mālīs (28,000), Sainīs (16,000), and Tagās (15,000); while the Gūjars, who are graziers as well as cultivators and landholders, number 51,000. Kahārs (41,000) are labourers, *pālkī*-bearers, and fishermen. Among castes not found in all parts of the Provinces may be mentioned the Tagās, who claim to be Brāhmans; the Sainīs, Gūjars, Jāts, and Kambohs (3,000), who only inhabit the western Districts; and the Banjārās (6,000), who chiefly belong Castes and occupations.

to the submontane tract. The criminal tribes, Hābūrās (824) and Sānsiās (585), are comparatively numerous in this District. A very large proportion of the Muhammadan population consists of the descendants of converts from Hinduism. The three tribes of purest descent are: Saiyids, 8,000; Mughals, 2,000; and Pathāns, 16,000. Shaikhs, who often include converts, number 28,000. On the other hand, Muhammadan Rājputs number 23,000; Gūjars, 20,000; Telis (oil-pressers and labourers), 49,000; Julāhās (weavers), 45,000; and Gārās, 45,000; while the number of the lower artisan castes professing Islām is also considerable. Gārās and Jhojhās (12,000) are peculiar to the west of the Provinces. The proportion of agriculturists (44 per cent.) is low, owing to the large number of landless labourers (14 per cent.) and artisans. Cotton weavers form 4 per cent. of the total population.

Christian missions.

Out of 1,617 native Christians in 1901, more than 1,100 were Methodists, 200 were Anglicans, 250 Presbyterians, and 53 Roman Catholics. The American Presbyterian Mission commenced work in 1835, the Society for the Propagation of the Gospel in 1855, and the American Methodist Episcopal Mission in 1874.

General agricultural conditions.

Excluding the jungle tracts immediately under the Siwāliks, the District may be divided into two main tracts: the uplands in the centre, and the low-lying land or *khādar* on the banks of the great rivers. A feature of even greater importance is the possibility of canal irrigation, and generally speaking it may be said that cultivation is most careful where irrigation is available. It is inferior in the unprotected uplands, and worst in the *khādar* and submontane tracts. There are two harvests as usual, the autumn or *kharīf* and the spring or *rabi*.

Chief agricultural statistics and principal crops.

The District presents no peculiarity of tenures. Out of 2,500 *mahāls*, 900 are *bhaiyāchārā*, 900 *pattīdāri*, and 700 *zamīndāri*. The main agricultural statistics according to the village papers are shown below for 1903-4, in square miles:—

Tahsil.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Sahāranpur . .	619	370	51	30
Deoband . . .	385	320	112	20
Roorkee . . .	796	369	38	58
Nakūr . . .	428	306	84	70
Total	2,228	1,365	285	178

The area, in square miles, under each of the principal food-grains in 1903-4 was: wheat, 553; rice, 204; gram, 203;

maize, 126; *bājra*, 127; and barley, 55. Other important crops are sugar-cane, 64; and cotton, 26.

Improvements in agricultural practice. The great features in the agriculture of the District are the enormous extension of rice cultivation, especially in the Nakūr, Deoband, and Roorkee *tahsīls*; and the increasing area under the more valuable crops—wheat, barley, and sugar-cane. The area under cotton fluctuates, but is not increasing. Very small amounts are ordinarily advanced under the Agriculturists' Loans Act. Between 1891 and 1903 the total advances amounted to half a lakh, but Rs. 34,000 of this was lent in the famine year 1896-7. Advances under the Land Improvement Loans Act are still smaller. Much has been done to improve the drainage, especially in the Jumna and Ganges *khādars*, by straightening and embanking streams. In 1880 a new branch of the Ganges Canal was opened, which serves the Deoband *tahsīl*.

Cattle and horses. There is no local breed of cattle, and the animals used are either imported, or of the inferior type common in the Provinces. The breed of horses in the south of the District was formerly good, and in 1842 a stud farm was opened at Sahāranpur city. For many years there was a considerable sale of horses at the Hardwār fair; but this has almost ceased, and the Sahāranpur farm is now a dépôt for training imported remounts. Government stallions are, however, maintained at several places in the District. Mule-breeding has been tried, and there are several donkey stallions; but the operations have not been very successful.

Irrigation. Of the total area under cultivation in 1903-4, the area irrigated from canals was 201 square miles, or 15 per cent. Wells irrigated 75 square miles, and other sources 9. The canal irrigation is supplied by the EASTERN JUMNA and UPPER GANGES CANALS, both of which start in this District. The former irrigates about 130 square miles in the Nakūr, Deoband, and Sahāranpur *tahsīls*; and the latter about 75 square miles in Deoband, Sahāranpur, and Roorkee. Well-irrigation is important only in Nakūr. Up to 1880 the area irrigated from the Ganges Canal in this District was small, but the construction of the Deoband branch between 1878 and 1880 has enabled a larger area to be watered. There is a striking difference in the methods of irrigation from wells. East of the Hindan water is raised in a leathern bucket, as in most parts of the Provinces, while to the west the Persian wheel is used.

Forests. The total area of the forests is 295 square miles. Most of this area is situated on the slopes of the Siwāliks or in the

tract along the foot of the hills; but there are also Reserves on the islands in the Ganges below Hardwār, and in the centre of the Roorkee *tahsīl* south of Hardwār. The forests on the hills, with an area of nearly 200 square miles, are chiefly of value as grazing and fuel reserves and as a protection against erosion; but in the submontane tract *sāl* timber may in time become valuable. In 1903-4 the total forest revenue was Rs. 45,000, of which Rs. 11,000 was received for timber and bamboos, the other receipts being chiefly for firewood, charcoal, grazing, and minor products.

Minerals. The mineral products are insignificant. In the middle and southern portions, *kankar* or nodular limestone is obtained a few feet below the surface, and block *kankar* is occasionally found. To the north the substratum consists of shingle and boulders, gradually giving place to sandstone, which appears at the surface in the Mohan pass. Stone hard enough for building purposes is scarce, and Sir Proby Cautley was obliged to use brick largely in the magnificent works on the upper course of the Ganges Canal. The houses at Hardwār and Kanhal are often constructed of pieces of stone carefully selected; but the quantity obtained is not large enough to defray the expense of carriage to a long distance, and building stone is generally obtained from Agra.

Arts and manufactures. The most important indigenous industry is that of cotton-weaving, which supports 46,000 persons, or 4 per cent. of the population. Next to this comes wood-carving, which is very flourishing, though the increased demand has led to a deterioration in style and finish. Less important industries are cloth-dyeing and printing, cane and woodwork, and glass-blowing in country glass. In 1903 there were two cotton-ginning and pressing factories, one rice-mill, and an indigo factory. There are also five Government factories of some importance: namely, the North-Western Railway workshops at Sahāranpur city, the Canal foundry, the Sappers and Miners workshops, and the Thomason College Press and workshops, the last four being all at Roorkee.

Commerce. The opening of new railways has greatly developed trade; and the District has a large export business with the Punjab and Karāchi by the North-Western Railway, with Bombay via Ghāziābād, and with Calcutta by the Oudh and Rohilkhand Railway. Wheat and oilseeds are the articles most largely exported, and salt, metals, and piece-goods the chief imports.

Railways and roads. The first railway opened was the North-Western Railway

in 1869, which enters the District in the middle of the southern boundary and passes north-west through Sahāranpur city. In 1886 the Oudh and Rohilkhand Railway main line was extended through Roorkee to Sahāranpur, its terminus, and a branch line was opened from Laksar to Hardwār, the great pilgrim centre. The latter was extended by the Hardwār-Dehra (Company) line in 1900, and now conveys the whole of the passenger and most of the goods traffic to the hill station of Mussoorie. A light railway is being constructed from Shāhdara, in Meerut District, to Sahāranpur.

The total length of metalled roads is 111 miles, and of unmetalled roads 415 miles. Except 98 miles of metalled roads, the whole of these are maintained from Local funds. There are avenues of trees along 176 miles. From Sahāranpur two roads lead north across the Siwāliks and the valley of the Dūn. The road to CHAKRĀTĀ is still a military route, though maintained by the civil authorities, but that to Dehra has lost its importance. The old road from the Doāb to the Punjab runs alongside the North-Western Railway, which has largely superseded it. The Jumna and Ganges *khādar* are not well supplied with roads, but the latter is generally accessible from the Oudh and Rohilkhand Railway. The Forest department maintains a road along the foot of the Siwāliks, and there are good roads along the canal banks. The Ganges Canal is navigable, and carries timber and bamboos to Meerut, but the Jumna Canal has no navigable channels.

Famine. Sahāranpur has suffered from famine, but not so severely as the Districts south of it. Remissions of revenue were made in 1837-8. In 1860-1 work was provided on a road from Roorkee to Dehra, at a cost of 2½ lakhs, besides an expenditure of Rs. 59,000 on other relief. It was noted, however, that the great canals had mitigated the scarcity, and there was an average spring crop in two-fifths of the District. In 1868 and 1877 the failure of the rains caused distress; but it was not so marked as in other Districts. During 1896-7, when famine raged elsewhere, the high prices of grain caused exceptional prosperity to agriculturists in the tracts protected by canals and wells; and though test works were opened, no workers came to them.

District sub-divisions and staff. The District is divided into four *tahsīls* and fifteen *parganas*. The Roorkee *tahsīl* forms a subdivision usually in charge of a Joint Magistrate residing at Roorkee, assisted by a Deputy-Collector. A *tahsīldār* is stationed at the head-quarters of each *tahsīl*. The remaining members of the District staff,—

namely, the Collector, three Assistants with full powers, and one Assistant with less than full powers—reside at Sahāranpur. There are also officers of the Canal department.

Civil justice and crime.

The *tahsīls* of Sahāranpur and Nakūr are in the jurisdiction of the Munsif of Sahāranpur, and the rest of the District under the Munsif of Deoband. There are also a Subordinate Judge and one Assistant Judge. Civil appeals from Dehra Dūn District (except the Chakrātā *tahsīl*), and also from the District of Muzaffarnagar, lie to the District Judge of Sahāranpur, who likewise sits as Sessions Judge for the three Districts. Crime is of the ordinary nature. Cattle-theft is more than usually common, owing to the number of Gūjars, who are notorious cattle-lifters. Infanticide was formerly very prevalent; but the number of families proclaimed has fallen considerably, and the annual cost of special police is only Rs. 600, as compared with Rs. 4,000 in 1874.

Land revenue administration.

The District was acquired in 1803 and at first formed part of a large area called Sahāranpur, which also included Muzaffarnagar and part of Meerut. This was divided into a northern and southern part. The District as it exists at present was formed in 1826. At annexation a large portion of it was held at a fixed revenue by a few powerful chiefs, whose occupation dated from the troubled times of Rohilla and Marāthā government; and these tenures were not interfered with till the death of the grantees, between 1812 and 1815. Elsewhere the usual system of short settlements based on estimates of the value of crops was in force, and engagements for the payment of revenue were taken from the actual occupiers of the soil. A quinquennial settlement made on the same principles in 1815–6 was extended by two further terms of five years each. The next settlement was based on a chain survey, and on more accurate calculations of out-turn from which fair rents were estimated, or on the value of the share of produce actually taken by the landlords. Produce rents were the rule and soil rents were unknown. In 1859 a new assessment was commenced. This was based on a plane-table survey; but the proposals were not accepted, and the assessment was revised between 1864 and 1867. Standard rent rates were obtained by classifying villages according to their agricultural condition, and ascertaining the average of the cash rents, or by calculating soil rates. The latest revision was commenced in 1887, and was largely made on rent-rolls corrected in the usual way. Cash rents existed in less than half of the total area, and the valuation of the grain-

rented area was difficult. The revenue fixed was 14·3 lakhs, or 47 per cent. of the corrected rental 'assets.' The incidence was Rs. 1–14–0 per cultivated acre and Rs. 1–9–0 per assessable acre, the rates varying in different *parganas* from R. 1 to Rs. 2–2–0.

The total receipts from land revenue and from all sources have been, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue .	12,07	13,05	15,33	15,25
Total revenue .	15,22	20,31	25,03	25,34

Local self-government.

There are four municipalities—SAHĀRANPUR, HARDWĀR UNION, DEOBAND, and ROORKEE — and fourteen towns administered under Act XX of 1856. The population of five of the latter—GANGOH, MANGLAUR, RĀMPUR, AMBAHTĀ, and NAKŪR—exceeds 5,000. Outside these places, local affairs are administered by the District board. In 1903–4 the income and expenditure of the board amounted to 1·2 lakhs each, the expenditure on roads and buildings being Rs. 40,000.

Police and jails.

The police of the District are supervised by a Superintendent and two Assistants, and five inspectors. There are 22 police stations; and the total force includes 97 sub-inspectors and head constables and 446 men, besides 373 municipal and town police, and 2,035 rural and road police. The District jail, in charge of the Civil Surgeon, had an average of 306 inmates in 1903.

Education.

Only 2·5 per cent. of the population (4·5 per cent. males, 0·2 per cent. females) can read and write, compared with a Provincial average of 3·1 per cent. The proportion is distinctly higher in the case of Hindus than of Musalmāns, and the Sahāranpur and Roorkee *tahsīls* are better than the other two. In 1880–1 there were 157 schools with 5,000 pupils, exclusive of private and uninspected schools. In 1903–4, 198 public institutions contained 8,158 pupils, of whom 581 were girls, besides 429 private schools with 6,198 pupils. Of 198 schools classed as public, four were managed by Government, and 117 by the District and municipal boards. Of the total number of pupils, 12,000 were in primary classes. The expenditure on education was 2·6 lakhs, of which 1·9 lakhs was met from Provincial revenues, Rs. 39,000 from Local funds, and Rs. 9,000 from fees. The greater part of the Government

expenditure is on the Roorkee College. There is a famous school of Arabic learning at Deoband.

Hospitals and dispensaries.

There are 15 hospitals and dispensaries, with accommodation for 80 in-patients. In 1903 the number of cases treated was 107,000, of whom 2,500 were in-patients, and 8,000 operations were performed. The total income was Rs. 21,000, chiefly from Local funds.

Vaccination.

The number of persons vaccinated in 1903–4 was 37,000, or 36 per 1,000 of population. Vaccination is compulsory only in the municipalities and the cantonment of Roorkee.

[*District Gazetteer* (1875, under revision); L. A. S. Porter, *Settlement Report* (1891).]

Sahāranpur Tahsīl.—Northernmost *tahsīl* of Sahāranpur District, United Provinces, lying between 29° 52′ and 30° 24′ N. and 77° 26′ and 77° 53′ E., with an area of 619 square miles. It is divided into four *parganas*: Faizābād, Muzaffarābād, Sahāranpur, and Haraura. The boundaries are artificial on the south and east, while the Jumna flows on the west, and the Siwāliks form the northern boundary. The population rose from 312,498 in 1891 to 334,681 in 1901. There are 497 villages and one town, SAHĀRANPUR, the head-quarters of the District and *tahsīl* (population, 66,254). In 1903–4 the demand for land revenue was Rs. 4,26,000, and for cesses Rs. 69,000. The rainfall is 38 inches, being slightly above the District average. In the north is a strip of forest land. Of 370 square miles under cultivation in 1903–4, 51 were irrigated. Irrigation is chiefly supplied by the Eastern Jumna Canal, which runs through the western portion. Much has been done to improve the drainage of the north-western portion, which is intersected by a network of small streams.

Deoband Tahsīl.—Southern *tahsīl* of Sahāranpur District, United Provinces, lying between 29° 34′ and 29° 53′ N. and 77° 21′ and 77° 49′ E. On the south it marches with Muzaffarnagar District, but the boundaries are artificial. The *tahsīl* comprises three *parganas*—Rāmpur, Nāgal, and Deoband—and has an area of 385 square miles, of which 320 were cultivated in 1903–4. The population rose from 205,627 in 1891 to 220,152 in 1901. The *tahsīl* contains three towns, DEOBAND (population, 20,167), the *tahsīl* head-quarters, and RĀMPUR (7,945) being the largest; and 311 villages. In 1903–4 the demand for land revenue was Rs. 3,85,000, and for cesses Rs. 64,000. The west of the *tahsīl* is irrigated by the Eastern Jumna Canal, and the east by the Deoband branch of the Upper Ganges Canal. The latter work, opened in 1880, has

been of great value. The area irrigated in 1903–4 was 112 square miles.

Roorkee Tahsīl.—Eastern *tahsīl* of Sahāranpur District, United Provinces, lying between 29° 38′ and 30° 8′ N. and 77° 43′ and 78° 12′ E., with an area of 796 square miles. It is bounded on the north by the Siwāliks, on the east by the Ganges, and on the south by Muzaffarnagar District. It comprises the *parganas* of Roorkee, Jwālāpur, Manglaur, and Bhagwānpur. The population fell from 290,498 in 1891 to 286,903 in 1901. There are 426 villages and six towns, HARDWĀR UNION (population, 25,597), ROORKEE (17,197), the *tahsīl* head-quarters, and MANGLAUR (10,763) being the largest. In 1903–4 the demand for land revenue was Rs. 3,86,000, and for cesses Rs. 62,000. In the same year the area under cultivation was 369 square miles, of which 38 were irrigated. Besides the forests on the slopes and at the foot of the Siwāliks, the *tahsīl* contains 20 square miles of grazing reserve south of Roorkee, known as the Pathrī forest, and a large area of low-lying land in the Ganges *khādar*. The head-works of the UPPER GANGES CANAL are near Hardwār, but the area irrigated in this *tahsīl* is small. The average rainfall is about 43 inches, being the highest in the District. Successful drainage operations have been carried out near Pathrī. The *tahsīl* forms a regular subdivision of the District, with a Civilian Joint Magistrate and a Deputy-Magistrate recruited in India, who reside at Roorkee.

Nakūr Tahsīl.—South-western *tahsīl* of Sahāranpur District, United Provinces, lying between 29° 39′ and 30° 10′ N. and 77° 7′ and 77° 34′ E. It comprises four *parganas*—Sultānpur, Sarsāwā, Nakūr, and Gangoh—which all lie on the east bank of the Jumna. The total area is 428 square miles, of which 306 were cultivated in 1903–4. The population rose from 192,657 in 1891 to 203,494 in 1901. There are 394 villages and eight towns, including GANGOH (population, 12,971), AMBAHTĀ (5,751), and NAKŪR (5,030), the head-quarters. In 1903–4 the demand for land revenue was Rs. 3,29,000, and for cesses Rs. 55,000. About one-third of the *tahsīl* lies in the Jumna *khādar*. The eastern portion is irrigated by the Eastern Jumna Canal, which supplied 24 square miles in 1903–4, while 60 square miles were irrigated from wells.

Ambahtā.—Town in the Nakūr *tahsīl* of Sahāranpur District, United Provinces, situated in 29° 52′ N. and 77° 20′ E. Population (1901), 5,751, Muhammadans being nearly

twice as numerous as Hindus. The place was originally a cantonment for Mughal troops, established by Fīroz Shāh Tughlak, and was known as Fīrozābād. The present town is modern, but contains two mosques, one built about 1516 and the other in Humāyūn's reign. The tomb of Shāh Abul Maālī, who died in the seventeenth century, is a fine domed building with minarets, still in good repair. The town is administered under Act XX of 1856, the annual income being about Rs. 1,600. Ambahtā carved doors have a well-deserved reputation.

Deoband Town.—Head-quarters of the *tahsīl* of the same name in Sahāranpur District, United Provinces, situated in 29° 42′ N. and 77° 41′ E., on the old road from the Doāb to the Punjab, close to the main line of the Oudh and Rohilkhand Railway. Population (1901), 20,167, of whom more than half (11,825) were Musalmāns.

According to legend, the town owes its name to the presence of a sacred grove (*Devī ban*), and an annual religious assembly still takes place in a neigbouring wood, where there is a temple of Devī. Local tradition relates that the Pāndavas spent their first exile here, and the fort is said to have been one of the earliest to fall in the raid of Sālār Masūd Ghāzī. During the Mutiny several disturbances occurred, which were repressed without much difficulty.

The town is situated 2½ miles west of the East Kālī Nadī, and the natural drainage of the country has been altered by the construction of the canals and railway. The outskirts have been fairly well drained, but the town itself presents a great problem. A scheme estimated to cost Rs. 50,000 was sanctioned in 1904, and the work is now approaching completion. The Arabic College here is one of the most important of its kind in Upper India. It was founded about 1876 as an offshoot of the Ajmer Gate College at Delhi, now defunct. Students come from Afghānistān, Bokhāra, and Samarkand in one direction, and from Madras and Bengal in the other. The teaching is entirely devoted to Eastern learning, especially Muhammadan theology, and the institution has no connexion with Government. There are also an English and an Anglo-vernacular school, and a dispensary, besides the *munsifī* and *tahsīlī* offices. The municipality was constituted in 1868. The income and expenditure from 1892 to 1901 averaged Rs. 13,000. In 1903-4 the income was Rs. 37,000, chiefly from a special grant of Rs. 20,000 and from octroi (Rs. 15,000); and the expenditure was Rs. 18,000. Deoband is a large grain-

exporting centre, and in the busy season several Calcutta firms have agents here buying wheat. Refined sugar and oilseeds are also exported, and the town is noted for the manufacture of cloth and country blankets.

Gangoh.—Town in the Nakūr *tahsīl* of Sahāranpur District, United Provinces, situated in 29° 47′ N. and 77° 17′ E. It is the chief town in the *pargana* of the same name. Population (1901), 12,971. Hindus numbered 5,741 and Musalmāns 7,172. The town consists of an old and new quarter, the former founded by a legendary hero, Rājā Gang, from whom its name is derived, and the latter by the famous saint, Shaikh Abdul Kuddūs, who gives his title to the western suburb, where his mausoleum stands, built by Humāyūn in 1537. During the Mutiny Gangoh was frequently threatened by the rebel Gūjars under the self-styled Rājā Fathūā; but Mr. H. D. Robertson and Lieutenant Boisragon attacked and utterly defeated them towards the end of June, 1857. There are three old mosques, two of which were built by Akbar and Jahāngīr, besides a school and a dispensary. The town is liable to be flooded from a large swamp south of the site, but a scheme has been prepared to drain this. The streets are paved and most of them have brickwork drains. Gangoh is administered under Act XX of 1856, the income raised being about Rs. 3,000 a year. It is the cleanest and best kept of all the towns under Act XX in the District.

Hardwār.—Ancient town and place of pilgrimage in Sahāranpur District, United Provinces, situated in 29° 58′ N. and 78° 10′ E. Till 1900 it was the terminus of a branch of the Oudh and Rohilkhand Railway opened in 1886, but it is now connected by rail also with DEHRA. The pilgrim route to the shrines of Kumaun passes through it. The population fluctuates considerably according to the number of pilgrims visiting it, and has been: (1872) 21,555, (1881) 28,106, (1891) 29,125, and (1901) 25,597. Of the total population in 1901, Hindus numbered 18,209 and Musalmāns 7,119.

The place has borne several names. According to tradition it was named Kāpilā after the sage of that name, who is said to have lived here. In the seventh century Hiuen Tsiang described a town named Mo-yu-lo, which was probably Mayūra or Māyāpur, a suburb south of Hardwār. The Chinese pilgrim also mentions that there was a Brāhmanical temple north of Mo-yu-lo which the Hindus called 'the gate of the Ganges,' and this name *Gangādwāra* is regularly used by the Muhammadan historians for Hardwār. The meaning of the present

name is disputed. Worshippers of Siva derive it from Hara, a name of Siva, while the Vaishnavas claim that the correct origin is from Harī, a name of Vishnu. Abul Fazl, in the reign of Akbar, refers to Māyā, known as Harīdwāra, and Tom Coryat, who visited the place in Jahāngīr's reign, called it 'Harī-dwāra, the capital of Siva.'

The town is beautifully situated on the right bank of the Ganges, at the foot of the Siwāliks, close by the gorge through which the river debouches on the plains. On the opposite shore rises the hill of Chandī Pahār, whose summit is crowned by a temple. The Ganges here divides into many shallow channels, with wooded islands between. One channel commences about 2 miles above Hardwār, and flows past the main town and its suburbs, Māyāpur and Kankhal, rejoining the parent river a little below the last-mentioned place. The head-works of the UPPER GANGES CANAL are situated on this branch, between Māyāpur and Kankhal. The town has grown considerably since the early part of the nineteenth century. At the present day the great object of attraction is the bathing *ghāt*, called *Harī-kā-charan* or *Harī-kī-pairī* ('Vishnu's footprint'), with the adjoining temple of Gangā-dwāra. A stone on the wall of the *ghāt* bears the footmark, which is an object of special reverence. Pilgrims struggle to be the first to plunge into the pool on great occasions, and stringent police regulations are required to prevent the crowd from trampling one another to death. In 1819, 430 persons, including some sepoys on guard, lost their lives in this manner, and the *ghāt* was enlarged. The great assemblage of pilgrims is held annually on the first day of the month of Baisākh, the commencement of the Hindu solar year, when the sun enters Aries. Every twelfth year the planet Jupiter is in the sign Aquarius (*Kumbh*) at this time, and the occasion is considered one of special sanctity, the fair being called the *Kumbh melā*. In 1796 the attendance was estimated at 2½ millions, and in 1808 at 2 millions. These were probably exaggerations, as the number at ordinary fairs was later found to be only about 100,000, and at the *Kumbh melā* about 300,000. In 1892 the fair was broken up on account of an outbreak of cholera, and the vast concourse of people sent off by rail before the great bathing day. The result of this action was the formation of the Hardwār Improvement Society, supported by contributions from Hindus all over India, which has introduced various sanitary reforms. The bottom of the pool has been paved, and the current of the Ganges directed so as to secure a con-

stant strong flow of water, while an iron railing has been erected to prevent bathers from being carried away. Another sacred pool, called Bhīmgoda, has been enlarged and paved, and water is now supplied from the Ganges. The society also furnished part of the funds required to bridge a torrent-bed lying between the station and the town. Plague broke out in 1897, but was quickly suppressed. A few more cases took place in 1898, and the measures adopted to prevent the spread led to a riot. The numbers at the fair have decreased considerably since plague appeared. The numbers at any one time are also affected by the fact that pilgrims now visit Hardwār throughout the year, instead of only on the fixed days. On the great bathing day at the *Kumbh* fair of 1903 about 400,000 persons were present. Cholera, however, broke out; and although the cases at Hardwār were few, the disease was carried by the pilgrims into the hill tracts leading to the Himālayan shrines. In early days riots and bloody fights were of common occurrence amid the excited throng. In 1760, on the great bathing day, the rival mobs of *gosains* and *bairāgīs* had a long battle, in which 1,800 are said to have perished. In 1795 the Sikh pilgrims slew 500 of the *gosains*. Tīmūr plundered and massacred a great concourse of pilgrims here shortly after seizing Delhi in 1398. In 1894 it was anticipated that the flood caused by the GOHNĀ LAKE would damage the town and head-works of the canal; but the river rose only 12 feet, and the damage was not excessive. The trade of the town is confined to supplying the wants of the pilgrims, and to the through traffic with Dehra. Branches of the American Methodist Mission are maintained at Jwālāpur and Kankhal. The Hardwār Union municipality was constituted in 1868, and includes the two villages of Māyāpur and Kankhal. The income and expenditure from 1892 to 1901 averaged about Rs. 43,000. In 1903–4 the income was Rs. 91,000, of which Rs. 31,000 was derived from octroi, Rs. 20,000 from a loan, and Rs. 33,000 from the pilgrim tax. The expenditure was 1·2 lakhs; chiefly on the fair, Rs. 84,000.

Manglaur.—Town in the Roorkee *tahsīl* of Sahāranpur District, United Provinces, situated in 29° 48′ N. and 77° 53′ E., 6 miles south of Roorkee town and close to the Upper Ganges Canal. Population (1901), 10,763. According to tradition, the town was founded by Rājā Mangal Sen, a Rājput feudatory of Vikramāditya, and the remains of a fortress attributed to him can still be traced. A mosque in the town was built by Balban in 1285. There is little trade, but the crops

grown in the neighbourhood are irrigated from the canal and are exceptionally fine, and there is a great demand for manure. The place was formerly noted for carpentry. This industry, which had begun to decline, has now revived; and very good chairs and other articles are made. The Muhammadan weavers are much impoverished. Manglaur is administered under Act XX of 1856, with an income of about Rs. 3,500. Much has been done to improve its sanitary condition.

Nakūr Town.—Head-quarters of the *tahsīl* of the same name in Sahāranpur District, United Provinces, situated in 29° 56′ N. and 77° 18′ E. Population (1901), 5,030, Hindus and Musalmāns being about equally divided. Nakūr is said to have been founded by Nakula, one of the Pāndavas, from whom its name is derived. The town suffered much in the Mutiny and was burnt by a party of Gūjars; but a relieving force recovered part of the plunder. There is a fine Jain temple, and also a *tahsīlī* school, a dispensary, and a *sarai*, all well built. Act XX of 1856 is in force, and taxation yields about Rs. 1,100 a year. The site is raised and well drained. There is very little trade.

Rāmpur.—Town in the Deoband *tahsīl* of Sahāranpur District, United Provinces, situated in 29° 48′ N. and 77° 28′ E., on the old road from Sahāranpur to Delhi. Population (1901), 7,945, the number of Hindus and Musalmāns being about equal. The town is said to have been founded by one Rājā Rām, and according to tradition it was captured by Sālār Masūd. There is a fine modern Jain temple, and also a tomb of a Muhammadan saint, Shaikh Ibrāhīm, near which a religious fair is held in June. The town is administered under Act XX of 1856, with an income of about Rs. 2,000. There is some trade in grain, and the town is noted for the manufacture of glass bangles.

Roorkee Town (*Rūrkī*).—Head-quarters of the *tahsīl* of the same name, and cantonment, in Sahāranpur District, United Provinces, situated in 29° 51′ N. and 77° 53′ E., on the main line of the Oudh and Rohilkhand Railway, and connected by road with Sahāranpur and Hardwār. The Upper Ganges Canal passes between the native town and the cantonment. Population (1901), 17,197. Hindus numbered 9,256 and Muhammadans 6,197.

Roorkee was the head-quarters of a *mahāl* or *pargana* mentioned in the *Ain-i-Akbarī*; but about 1840, when the Ganges Canal works commenced, it was a mere mud-built village on the banks of the SOLĀNI. It is now a fair-sized town, with broad

metalled roadways meeting at right angles, and lined with excellent shops. The town is provided with good saucer drains, flushed with water pumped from the canal. A short distance above the town the Ganges Canal is carried over the wide bed of the Solāni by a magnificent brick aqueduct. Roorkee first became important as the head-quarters of the canal workshops and iron foundry, which were established in 1845–6, and extended and improved in 1850. For thirty years the workshops were conducted rather on the footing of a private business than as a Government concern. In 1886 they were brought under the ordinary rules for Government manufacturing departments. The annual out-turn is valued at about 2 to 3 lakhs, and eighty workmen were employed in 1903. Roorkee is the head-quarters of the Bengal Sappers and Miners, who have large workshops employing 135 men in 1903. The most important institution is, however, the Thomason Engineering College, called after its founder, who was Lieutenant-Governor from 1843 to 1853. This institution had its origin in a class started in 1845 to train native youths in engineering, to assist in the important public works then beginning. The decision arrived at in 1847 to carry out the Ganges Canal project increased the necessity for a well-trained staff of engineers, and the college was opened in 1848. In 1851 there were fifty students, and forty-two had entered the service. Up to 1875 each student received a stipend; but from that year the number of scholarships and the number of guaranteed appointments were limited, though education remained practically free. Since 1896 all students except soldiers and industrial apprentices have paid fees, but the applications for admission far exceed the accommodation. In the same year the methods of instruction were greatly developed, and the college was practically rebuilt. There are now chemical, physical, electrical, and mechanical laboratories, and technical workshops fitted with the latest tools and machinery. The press is supplied with power machines, and turns out all varieties of work besides ordinary printing. There are also mechanical and industrial classes. The total number of students in 1903–4 was 369; and in 1903 the press employed 125 workmen, and the workshops 52, besides 77 students. Roorkee is also the head-quarters of the Society for the Propagation of the Gospel and American Methodist Missions in this District. The Joint Magistrate and the Deputy-Collector posted to the subdivision, and an Executive Engineer of the Upper Ganges Canal, reside here.

The municipality was created in 1868. The income and expenditure from 1892 to 1901 averaged Rs. 17,000 and Rs. 16,000. In 1903-4 the income was Rs. 27,000, chiefly from octroi (Rs. 16,000); and the expenditure was Rs. 28,000. Besides the Bengal Sappers and Miners, two heavy batteries of artillery are ordinarily stationed here. The cantonment income and expenditure are about Rs. 6,000 annually, and the population of the cantonment in 1901 was 2,951.

Sahāranpur City.—Head-quarters of the District and *tahsīl* of the same name in the United Provinces, situated in 29° 57′ N. and 77° 33′ E., 988 miles by rail from Howrah and 1,069 from Bombay. It lies on the old road from the Doāb to the Punjab, and is the northern terminus of the Oudh and Rohilkhand Railway main line, which here meets the North-Western Railway. The population has risen in the last thirty years: (1872) 43,844, (1881) 59,194, (1891) 63,194, and (1901) 66,254. More than half the total are Musalmāns (37,614). The history of the city has been given in that of the District. It was founded about 1340, and derives its name from a Musalmān saint, Shāh Haran Chishti. In Akbar's time it was the capital of a *sarkār*, and was sufficiently important to be constituted a mint town.

The city lies in a low moist situation on both sides of the Dhamaula Nadī, and is also traversed by the Pandhoī Nadī. In 1870 both of these streams were improved and deepened, with marked benefit to the public health. In 1900 the main city drain was paved and cunetted, and a scheme for flushing all drains is under consideration. About three-fourths of the houses are built of brick, and trade is increasing. The opening of the North-Western Railway in 1869 gave the first impetus, and the construction of the Oudh and Rohilkhand line in 1886 has still further increased the importance of Sahāranpur. The place has, however, lost the traffic to the hill station of Mussoorie, which now passes by the Hardwār-Dehra Railway, opened in 1900. Besides the ordinary District staff, the officer in charge of the Botanical Survey of Upper India and the Executive Engineer, upper division, Eastern Jumna Canal, reside here. Sahāranpur also has large railway workshops, which employed 241 hands in 1903, and in the same year two cotton-gins employed 158 and a rice-mill 92 hands. Wood-carving is an important industry, and really good work can be obtained. The Government Botanical gardens, founded in 1817 on the site of an old garden of the Rohillas, cover an area of 156 acres, and sell large quantities of fruit trees, strawberry

plants, timber, and ornamental trees and shrubs, and flower and vegetable seeds, besides supplying drugs to Government. The former stud farm, with an area of 2,413 acres, is now a reserve remount dépôt, at which imported horses are trained and acclimatized for the army. The American Methodist and Presbyterian Churches have missions here, and there is a fine Muhammadan mosque built on the model of the Jāma Masjid at Delhi.

Sahāranpur was constituted a municipality in 1867. The income and expenditure during the ten years ending 1901 averaged Rs. 62,000 and Rs. 59,000. In 1903-4 the income was Rs. 93,000, chiefly derived from octroi (Rs. 65,000); and the expenditure was Rs. 77,000.

Sarsāwā.—Ancient town in the Nakūr *tahsīl* of Sahāranpur District, United Provinces, situated in 30° 1′ N. and 77° 25′ E., near a station of the same name on the North-Western Railway, and on the old road from Sahāranpur to the Punjab. The population fell from 3,827 in 1891 to 3,439 in 1901. The town takes its name from Siras Pāl, who was attacked and defeated by Nāsir-ud-dīn of Ghazni, and it is also said to have been plundered by Mahmūd of Ghazni. In Bābar's time the mound was still a strong brick fort, and the town and fort are mentioned as important places in the *Ain-i-Akbarī*. According to one version, Sarsāwā was the birthplace of the celebrated saint Gūgā or Zāhir, who is reverenced by both Hindus and Muhammadans all over Northern India[1].

Muzaffarnagar District.—District in the Meerut Division of the United Provinces, lying between 29° 10′ and 29° 45′ N. and 77° 2′ and 78° 7′ E., with an area of 1,666 square miles. On the north it is bounded by Sahāranpur District, and on the south by Meerut, while the Ganges separates it on the east from Bijnor, and the Jumna on the west from the Punjab District of Karnāl. Muzaffarnagar consists of a central elevated tract, flanked on either side by the low-lying land or *khādar* of the Ganges and Jumna. The Ganges *khādar* is a precarious tract of moist land with scanty cultivation, but generally covered with coarse grass and occasional patches of tamarisk. The northern portion, included in the Gordhanpur *pargana*, is especially liable to flooding from the Solāni river, which is increased by percolation from the Upper Ganges Canal. Drains and dams have been constructed with but little success, and the *khādar* is chiefly valuable as a grazing-ground. The Jumna *khādar* is less swampy, but is

Boundaries, configuration, and river system.

[1] W. Crooke, *Popular Religion of Northern India*, p. 133.

equally poor, and much of it is covered with *dhāk* jungle (*Butea frondosa*). The uplands are divided into four tracts by four rivers flowing from north to south. On the east is the large tract lying between the old high bank of the Ganges and the Kālī Nadī (West), which is watered by the Upper Ganges Canal. This tract is generally fertile, but is crossed by a sandy ridge, and suffers from excessive moisture near the Kālī Nadī. Between this river and the Hindan lies another fertile tract, which was immensely improved by the opening of the Deoband branch of the Ganges Canal in 1880, as the spring-level is very low. This area is less sandy than the first, but is crossed by one well-defined belt of sand. West of the Hindan, sand is comparatively rare; and the tract between this river and the Karsunī or Krishnī is uniformly good in the centre, though less fertile in the north and south. Between the Karsunī and Kathā, which marks the beginning of the Jumna tract, lies an area which is flourishing in the south, but inferior in the north, where population is scarce. This tract is watered by the Eastern Jumna Canal.

Geology. The District consists entirely of the Gangetic alluvium, which varies from fine sand to stiff clay.

Botany. The botany of the District presents no peculiarities. In the north-west corner *dhāk* jungle is abundant. About 16 square miles are under groves, the mango, pomegranate, and guava being the favourite trees. *Shīsham*, *jāmun*, and *siras* are the most common species in avenues. Thatching-grass is abundant, but its use is giving way to that of tiles.

Fauna. Wolves are fairly common, and wild hog swarm in the *khādar* and near the canals. Hog deer are also found near swampy land, and leopards are occasionally seen. Tigers, which were formerly common, are now very rare.

Climate and temperature. The climate is comparatively cool, owing to the proximity of the hills, and the mean temperature is about 76°. There can be no reasonable doubt that the wide extension of irrigation has had a prejudicial effect on the climate, and its stoppage near towns has occasionally been necessary in the interest of the public health.

Rainfall. The rainfall over a long series of years has averaged 33 inches, increasing gradually from 30 inches in the west to about 37 inches in the east. Large variations from the normal are not very common.

History. Tradition represents Muzaffarnagar as having formed a portion of the Pāndava kingdom, which had its capital at Hastināpur in the adjoining District of Meerut, and at a more

historical date as being included in the dominions of Prithwī Rāj, the Chauhān ruler of Delhi. Authentic history first shows us the country around Muzaffarnagar at the time of the Musalmān conquest in the thirteenth century, and it remained a dependency of the various dynasties who ruled at Delhi until the final dissolution of the Mughal empire. The earliest colonists probably consisted of Aryan settlers, Brāhman and Rājput. They were succeeded by the Jāts, who occupied the whole southern portion of the District, where their descendants still form the chief landowning class. At a later date, the Gūjars took possession of the poorer tracts which the Jāts had left unoccupied, and they, too, are still to be found as *zamīndārs*. Finally, with the Muhammadan irruptions, bodies of Shaikhs, Saiyids, and Pathāns entered Muzaffarnagar, and parcelled out among themselves the remainder of the territory.

Tīmūr paid one of his sanguinary visits to the District in 1399, when all the infidel inhabitants whom he could capture were mercilessly put to the sword. Under Akbar, Muzaffarnagar was included in the *sarkār* of Sahāranpur. During the seventeenth century, the Saiyid family of Bārha rose to great eminence, and filled many important offices about the court. Their ancestors are said to have settled in Muzaffarnagar about the year 1350, and to have enjoyed the patronage of the Saiyid dynasty which ruled at Delhi in the succeeding century. In 1414 Sultān Khizr Khān conferred the control of Sahāranpur on Saiyid Salīm, the chief of their fraternity; and from that time forward they rose rapidly to territorial power and court influence. Under Akbar and his successors, various branches of the Bārha stock became the leading landowners in the Province. They were celebrated as daring military leaders, being employed by the emperors on all services of danger, from the Indus to the Narbadā. It was mainly through their aid that the victory near Agra was won in 1707, by which Bahādur Shāh I made good his claim to the imperial title. The part which they bore in the revolution of 1712, when Farrukh Siyar was elevated to the throne, belongs to the general history of India. As a reward for the important services rendered on that occasion, Saiyid Abdullah was appointed Wazīr of the empire, and Saiyid Husain Alī commander-in-chief. On their fall in 1721, the power of the Bārha family began to wane, until, in 1737, they were almost exterminated, on a pretext of a rebellious design, by their inveterate enemy the Wazīr Kamar-ud-dīn.

During the whole of the disastrous eighteenth century

Muzaffarnagar suffered from the same Sikh incursions which devastated the remainder of the Upper Doāb. The Sikhs were assisted in their raids by the Gūjars, whose semi-nomad life made them ever ready to join in rebellion against the government of the time. As regularly as the crops were cut, Sikh chieftains poured their predatory hordes into the Doāb, and levied an organized blackmail. The country was divided between them into regular circuits, and each chieftain collected requisitions from his own circuit only. It was during this anarchic period that those mud forts began to spring up which became in time so characteristic of the Upper Doāb. In 1788 the District fell into the hands of the Marāthās, under whom the famous military adventurer, George Thomas, endeavoured with some success to prevent the constant raids across the Jumna. The Begam Sumrū of Sardhana in Meerut District held large possessions in the southern *parganas* at the end of the eighteenth century.

After the fall of ALĪGARH in 1803, the whole Doāb as far north as the Siwālik Hills came, without a blow, under the power of the British. A final Sikh invasion occurred in the following year, encouraged by the advance of Holkar's forces; but it was promptly suppressed by Colonel Burn, who drove the intruders back across the river.

The first incident which broke the course of civil administration was the Mutiny of 1857. On the news of the outbreak at MEERUT, the Magistrate of Muzaffarnagar, who was then in weak health and about to go on leave, issued orders that all the public offices should be closed. This measure naturally produced a general impression that British rule was suspended. At first there was no open rebellion, and the semblance of government was kept up, but plunder and incendiarism went on unmolested. At length, on June 21, the 4th Irregulars rose in revolt and murdered their commanding officer as well as another European, after which they marched off to Shāmlī. Five days later, a party of the 3rd Cavalry arrived at the town; and on July 1 Mr. R. M. Edwards came in from Sahāranpur with a body of Gurkhas, and took charge of the administration. Vigorous measures were at once adopted to repress crime and collect revenue, the good effects of which became quickly apparent. The western *parganas*, however, remained in open revolt; and the rebels of Thāna Bhawan attacked Shāmlī, where they massacred 113 persons in cold blood. Reinforcements shortly after arrived from Meerut; and Thāna Bhawan, being evacuated by the rebels, had its walls and gates razed to

the ground. After this occurrence no notable event took place, though the troops were kept perpetually on the move, marching backwards and forwards along the Ganges, and watching the mutineers on the opposite bank. Order was restored long before the end of the Mutiny.

Archaeology. There are no important Hindu buildings, but pious Muhammadans have erected many mosques and tombs in different parts of the District. Several buildings at KAIRĀNA date from the sixteenth and seventeenth centuries; at Majherā, 18 miles south-east of Muzaffarnagar, there are some sixteenth-century tombs of the Saiyids; and at Ghausgarh, 21 miles north-west, are the remains of a fort built by Najīb Khān, the Rohilla, and a fine mosque erected by his son.

The people. The District contains 15 towns and 913 villages. Population has risen steadily. The number at the last four enumerations was as follows: (1872) 690,107, (1881) 758,444, (1891) 772,874, and (1901) 877,188. There are four *tahsīls*—MUZAFFARNAGAR, KAIRĀNA, JĀNSATH, and BUDHĀNA—the head-quarters of each being at a town of the same name. The chief towns are the municipalities of MUZAFFARNAGAR, the administrative head-quarters of the District, KAIRĀNA, and KĀNDHLA. The principal statistics of population in 1901 are shown below:—

Tahsīl	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Muzaffarnagar.	464	3	264	239,064	515	+15·8	6,759
Kairāna . .	464	5	256	224,679	484	+12·3	5,339
Jānsath . .	451	4	244	216,411	480	+11·8	4,995
Budhāna . .	287	3	149	197,034	686	+14·1	5,510
District total	1,666	15	913	877,188	527	+13·5	22,603

Budhāna, which has the densest population, has the smallest area of inferior *khādar* land. Between 1891 and 1901 the District shared in the general prosperity of the Upper Doāb, which profited by the high prices in 1896–7, when famine attacked other parts of the Provinces. Hindus number 607,000, or 69 per cent. of the total; Muhammadans, 255,000, or 29 per cent.; and Jains, 10,150, or 1·2 per cent. The number of Aryas is 3,000, and this form of belief is rapidly increasing. More than 99 per cent. of the population speak

Hindustāni. A small colony of emigrants from Sind still use Sindī.

Castes and occupations.

Among the Hindus, Chamārs (leather-workers and labourers) number 135,000; followed by the Jāts (83,000), who are excellent cultivators. Kahārs (labourers, cultivators, and fishermen) and Brāhmans, with 47,000 each, come next. Rājputs include 29,000 Hindus and 24,000 Musalmāns; and Baniās 29,000, many of whom are Jains. Among the castes peculiar to the western Districts of the United Provinces are the Jāts; the Gūjars (agriculturists), 31,000; Sainīs (cultivators), 26,000; and Tagās (agriculturists), 10,000. The Bauriyās (726) are a criminal tribe peculiar to this District, the members of which steal and pass base money all over India. They are confined to a tract in the extreme west of the District, where they were settled by Government. The most numerous Musalmān caste is that of the Julāhās or weavers (29,000); but the Saiyids, who have been referred to in the history of the District, are very influential, though they number only 14,000. Shaikhs number 26,000; Pathāns, 12,000; Telis (oil-pressers), 14,000; and Kassābs (butchers), 14,000. The Jhojhās (8,000) and Gārās (6,000) are excellent cultivators, found chiefly in this District and in Sahāranpur. The population is largely agricultural, 49 per cent. being supported by occupations connected with the land. General labour supports 11 per cent. and personal services 10 per cent.

Christian missions.

Out of 1,402 Christians in 1901, natives numbered 1,259, of whom nearly 1,200 were Methodists. These are all recent converts of the American Methodist Mission, which has a branch here. The American Presbyterian Church also commenced work in 1887.

General agricultural conditions.

The most striking feature in the methods of cultivation is the high standard set by the Jāts. Manure is not confined to the area immediately surrounding the village site, but each field of good land is manured in turn. This is largely due to the importance of the sugar-cane crop, which requires much manure and careful cultivation. The injurious saline efflorescence called *reh* is found most abundantly in the Jumna *khādar* and near the Eastern Jumna Canal, and occasionally along the West Kālī Nadī and the Ganges Canal.

Chief agricultural statistics and principal crops.

The tenures are those found in most parts of the United Provinces. In 1890 there were 1,347 *zamīndāri*, 1,069 *bhaiyāchārā*, and 579 *pattīdāri mahāls*. The principal agricultural statistics for 1903–4 are shown in the table on the next page, the areas being in square miles.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Muzaffarnagar . .	464	334	127	47
Kairāna . . .	464	291	131	82
Jānsath . . .	451	307	115	59
Budhāna . . .	287	235	104	12
Total	1,666	1,167	477	200

The most important food-grains are wheat and gram, the areas under which in 1903-4 were 445 and 189 square miles respectively, or 38 and 16 per cent. of the net area cropped. A more valuable crop is, however, sugar-cane, with an area of 110 square miles. Rice, which is increasing in importance, especially in the case of the finer varieties, covered 86 square miles. Cotton is a valuable crop, but was grown on only 22 square miles, chiefly in Budhāna. Indigo cultivation has almost died out.

Improvements in agricultural practice. The development of the canal system—especially the extension of canal irrigation to the tract between the Kālī Nadī and Hindan—has been an important factor in the agricultural condition; and it has been assisted by drainage operations, which have led to the extension of cultivation by 10,000 acres in the north-west corner of the District alone. The normal area cultivated is about 66 per cent. of the whole. Muzaffarnagar wheat is celebrated throughout the Provinces, and carefully selected seed is exported to other Districts. From 1895 to 1900 loans were freely taken under the Agriculturists' Loans Act, the total being about Rs. 60,000; but the annual advances since then have fallen to about Rs. 1,500 or Rs. 1,000. Advances under the Land Improvement Loans Act amount to only about Rs. 1,000 annually.

Cattle, horses, and sheep. The domestic breed of cattle is inferior, and the best cattle are imported from the Punjab. The *khādar* is, however, noted as a grazing-ground where breeders bring cattle. Horse-breeding is very popular, and there are about 20 Government stallions and 600 branded mares. Every year in March a large horse show is held at Muzaffarnagar, where about 1,000 animals are exhibited. In 1903 the supervision of horse-breeding in this District was transferred from the Civil Veterinary to the Remount department. Rājputs, Jāts, and Gūjars are the chief breeders. Sheep are kept for their wool and meat, and goats for milk and meat.

Irrigation. Few Districts are so well protected by canals as Muzaffarnagar. Almost every part of the upland area is commanded, the

western portion by the Eastern Jumna Canal, the centre by the Deoband branch of the Upper Ganges Canal, and the east by the latter main canal and the Anūpshahr branch. More than 1,000 square miles are commanded and 450 could be irrigated annually. In 1903-4, 340 square miles were irrigated by canals and 130 by wells, other sources supplying only 7 square miles. Well-irrigation is especially required in the western tract to supplement the supply from the Eastern Jumna Canal. The usual method of supply is by a leathern bag with a rope and pulley worked by oxen; but the Persian wheel is used in the west of the District. The Canal department has constructed and maintains more than 500 miles of drains.

Minerals. The chief mineral product of value is *kankar* or nodular limestone, but this is scarce. *Reh*, a saline efflorescence of varying composition, is used for glass-making and some other purposes.

Arts and manufactures. There are few manufactures of importance. Cotton-weaving supports about 3 per cent. of the population. At Kairāna calico-printing is carried on to a small extent for a local market; and ornamental curtains are made there and at a few other places. Good country blankets are manufactured, especially at Gangerū, and are exported. A coarse blue faience is made at Mīrānpur, but this is inferior to the products of other Districts; papier mâché is prepared in small quantities at the same place. Two small indigo factories are still worked. The use of iron sugar-mills has led to the establishment of dépôts for their supply and repair in many towns.

Commerce. The most important article of export is wheat, which has obtained a good name and commands a high price in the European market. Nearly 30,000 tons of wheat were exported annually between 1897 and 1901 from Muzaffarnagar and Khataulī stations. Large quantities of unrefined sugar are also exported, usually by railway, but the trade with the Punjab is partly carried on by means of pack-camels. The other exports are rice and oilseeds.

Railways and roads. The North-Western Railway from Delhi to Sahāranpur passes through the centre of the District from south to north, and has four stations. The Oudh and Rohilkhand Railway just touches the District in the north-east corner, but hardly affects it. A light railway is under construction from Shāhdara in Meerut District to Sahāranpur, which will tap a rich tract in the west of the District.

There are only 78 miles of metalled roads and 321 miles of

unmetalled roads. All but 35 miles are maintained from Local funds. Avenues of trees are kept up along 150 miles. Good village roads are incompatible with easy canal-irrigation, and the local roads are often extremely bad, especially in the northern part of the Jumna Canal tract. They are best in the south of the District. The Ganges *khādar* also has poor communications. The Ganges is crossed by two boat bridges, and there are two main ferries over the Jumna.

The Ganges Canal is used for the transit of grain and timber, but the rivers are little used as means of communication.

Famine. Nothing is known of the history of famines in Muzaffarnagar before British rule, but it probably suffered less than the Districts farther south in the many severe visitations which devastated the Doāb. Scarcity was felt in 1803, and again in 1824, and famine in 1837, when Rs. 40,000 of revenue was remitted. The Eastern Jumna Canal was opened in 1830, and the Ganges Canal in 1854. Owing chiefly to the latter, the famine of 1860–1 was not much felt. The Anūpshahr branch of the Ganges Canal was, however, commenced as a relief work. In 1868–9 the protection of the canals was even more marked, and large stores of grain existed, while distress was further relieved by the demand for work on the Sind, Punjab, and Delhi (now called the North-Western) Railway. Numbers of immigrants poured in from Bīkaner and Western Rājputāna. Since 1869 the District has practically escaped famine, and high prices in 1877, 1896, and 1900 were a source of profit to the agricultural inhabitants, though immigrants in distressed circumstances were numerous. The opening of the Deoband branch canal in 1880 has further protected an important tract.

District staff. The District is divided into four *tahsīls* and seventeen *parganas*. The normal District staff includes, besides the Collector, four Assistants with full powers, one of whom is a Covenanted Civilian, when available, the rest being Deputy-Collectors recruited in India.

Civil justice and crime. There are two Munsifs in the District, which is included in the jurisdiction of the Subordinate Judge of Sahāranpur and in the Civil and Session Judgeship of the same place. Muzaffarnagar has a bad reputation for murders and cattle-theft, while gang dacoities are not uncommon. The Gūjars are particularly turbulent, and the Bauriyās and gipsy tribes—such as Sānsiyās, Kanjars, and Nats—are responsible for many thefts and burglaries. Infanticide was formerly very prevalent, but is not suspected now.

Land revenue administration.

The District was acquired in 1803, and at first part was included in Sahāranpur District, and part administered by the Resident at Delhi. In 1824 the present District was formed by creating a sub-collectorship at Muzaffarnagar, which became a separate District in 1826. The early settlements thus formed part of those for SAHĀRANPUR. Quinquennial settlements were made in 1825 and 1830, the latter being extended till 1840. Operations for the first regular settlement began with measurements in 1836 and 1838, when the soil was classified into circles and average rent-rates were obtained to form the basis of assessment. The rent-rates were really calculated from valuations of produce and the method of division of that produce, as rent was generally paid in kind, and in many villages where the tenure was *bhaiyāchārā* there were no rents, as the co-sharers cultivated practically the whole area. The total demand was 11·2 lakhs calculated at two-thirds of the rental 'assets,' and the settlement lasted twenty years. War, famine, and pestilence swept over the District before the next settlement operations began in 1860, and the new revenue at half 'assets' remained at 11·2 lakhs. In this settlement rent rates were calculated on an average of the rates paid in previous years. Inquiries were made with a view to making a permanent settlement, which was not granted, and the assessment was raised in various tracts in 1870 where it was found inadequate. The last settlement was completed in 1892 for thirty years, and the revenue was fixed at 15·1 lakhs, rising to 15·6 lakhs. The assessment was based on recorded rents, corrected where necessary; but the area for which rents were not paid was as high as 47·5 per cent. of the total, chiefly owing to the large proprietary cultivation. The revenue amounted to 48 per cent. of the assessable 'assets.' The incidence varied from Rs. 1-3-0 to Rs. 3-6-0 per acre, the average being Rs. 2-6-0.

The collections on account of land revenue and total revenue are shown below, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	12,20	12,18	15,55	15,59
Total revenue . .	15,02	18,01	22,05	21,92

Local self-government.

There are three municipalities—MUZAFFARNAGAR, KĀNDHLA, and KAIRĀNA—and eleven towns are administered under Act XX of 1856. In 1903-4 the District board had an income of 1·1 lakhs and an expenditure of 1·4 lakhs. The expenditure on roads and buildings was Rs. 64,000.

Police and jails.

The District Superintendent of police is assisted by three inspectors, and is in charge of 75 officers and 296 men of the regular police, besides 209 municipal and town police, and 1,277 village, road, and canal watchmen. The average daily number of prisoners in the jail in 1903 was 168.

Education.

The District takes a medium place in the Provinces as regards the literacy of its population, of whom 2·6 per cent. (4·7 males and 0·1 females) can read and write. In 1880–1 there were 135 schools under Government inspection, attended by 3,779 pupils, and in 1900–1 156 schools with 6,366 pupils. In 1903–4, 194 such schools contained 7,404 pupils including 192 girls, besides 398 private schools with 5,533 scholars, of whom 157 were girls. Of the public schools, 2 were managed by Government and 114 by the District and municipal boards. Out of a total expenditure of Rs. 32,000, Rs. 4,000 was derived from fees and Rs. 28,000 from Local and municipal funds.

Hospitals and dispensaries.

In 1903 there were seven hospitals and dispensaries, with accommodation for 65 in-patients. The number of cases treated was 70,000, of whom 1,000 were in-patients, and 4,600 operations were performed. The total expenditure was Rs. 12,600, chiefly met from Local and municipal funds.

Vaccination.

In 1903–4, 29,000 persons were vaccinated, representing 33 per 1,000 of the population. Vaccination is compulsory only in the municipalities.

[H. R. Nevill, *District Gazetteer* (1903); J. O. Miller, *Settlement Report* (1892).]

Muzaffarnagar Tahsīl.—Central *tahsīl* of Muzaffarnagar District, United Provinces, stretching north-east to the Ganges, and lying between 29° 22′ and 29° 45′ N. and 77° 27′ and 78° 7′ E., with an area of 464 square miles. It comprises five *parganas*: Muzaffarnagar, Baghra, Charthāwal, Pur Chhapār, and Gordhanpur. The population has risen from 206,496 in 1891 to 239,064 in 1901. The *tahsīl* contains 264 villages and three towns: namely, MUZAFFARNAGAR (population, 23,444), the District and *tahsīl* head-quarters, PUR (6,384), and CHARTHĀWAL (6,236). In 1903–4 the demand for land revenue was Rs. 4,03,000, and for cesses Rs. 51,000. The *tahsīl* lies chiefly on the upland area of the District; but *pargana* Gordhanpur, situated in the Ganges *khādar*, is a low-lying swampy tract in a state of chronic depression in spite of attempts to drain it. In 1894 the inhabitants of this *pargana* were removed, owing to the fear that the GOHNĀ LAKE would flood the whole area when it burst; and the tract is still largely

waste. The *tahsīl* is well irrigated by the Upper Ganges Main Canal and the Deoband branch. In 1903-4 the area under cultivation was 334 square miles, of which 127 were irrigated.

Kairāna Tahsīl.—North-western *tahsīl* of Muzaffarnagar District, United Provinces, lying between 29° 19′ and 29° 42′ N. and 77° 2′ and 77° 30′ E., with an area of 464 square miles. It comprises five *parganas*—Kairāna, Jhinjhāna, Shāmlī, Thāna Bhawan, and Bidaulī—and was formerly known as Shāmlī. Population increased from 200,157 in 1891 to 224,679 in 1901. The *tahsīl* contains five towns: namely, KAIRĀNA (population, 19,304), the head-quarters, THĀNA BHAWAN (8,861), SHĀMLI (7,478), JALĀLĀBĀD (6,822), and JHINJHĀNA (5,094); and 256 villages. In 1903-4 the demand for land revenue was Rs. 3,86,000, and for cesses Rs. 50,000. The river Jumna forms the western boundary, and the adjoining tract lies low and is intersected by *jhīls* and watercourses. The eastern half of the *tahsīl* is, however, part of the upland tract and is irrigated by the Eastern Jumna Canal. In 1903-4 the area under cultivation was 291 square miles, of which 131 were irrigated.

Jānsath Tahsīl.— South-eastern *tahsīl* of the Muzaffarnagar District, United Provinces, lying between 29° 10′ and 29° 36′ N. and 77° 36′ and 78° 6′ E., with an area of 451 square miles. The population increased from 193,533 in 1891 to 216,411 in 1901. The *tahsīl* contains four towns: namely, KHATAULĪ (population, 8,695), MĪRĀNPUR (7,209), JĀNSATH (6,507), the *tahsīl* head-quarters, and BHŪKARHERĪ (6,316); and 244 villages. In 1903-4 the demand for land revenue was Rs. 3,60,000, and for cesses Rs. 47,000. The Ganges bounds the *tahsīl* on the east, and the low land on the bank of the river is swampy; but the greater part lies on the upland and is protected by the Upper Ganges Main Canal and the Anūpshahr branch In 1903-4 the area under cultivation was 307 square miles, of which 115 were irrigated.

Budhāna Tahsīl.—South-western *tahsīl* of Muzaffarnagar District, United Provinces, lying between 29° 12′ and 29° 26′ N. and 77° 9′ and 77° 42′ E., with an area of 287 square miles. The population increased from 172,688 in 1891 to 197,034 in 1901. There are two towns with a population exceeding 5,000 — KĀNDHLA (11,573) and BUDHĀNA (6,664), the *tahsīl* head-quarters; and 149 villages. In 1903-4 the demand for land revenue was Rs. 4,09,000, and for cesses Rs. 50,000. The *tahsīl* is the most thickly populated in the District, supporting 686 persons per square mile,

as compared with a District average of 527; it is also the most closely cultivated. The Eastern Jumna Canal and the Deoband branch of the Upper Ganges Canal provide canal-irrigation. In 1903-4 the area under cultivation was 235 square miles, of which 104 were irrigated.

Bhūkarherī.—Town in the Jānsath *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 30′ N. and 77° 57′ E., 15 miles from Muzaffarnagar town. Population (1901), 6,316. The inhabitants are chiefly Jāts, who attained considerable power in the days of Pathān supremacy. There is an old tomb of a saint who is reverenced throughout Northern India by the Hindus as Gharīb Nāth, and by the Muhammadans as Gharīb Shāh.

Budhāna Town.—Head-quarters of the *tahsīl* of the same name in Muzaffarnagar District, United Provinces, situated in 29° 17′ N. and 77° 29′ E., 19 miles south-west of Muzaffarnagar town. Population (1901), 6,664. During the Mutiny the place was held by the rebels, but was retaken in September, 1857. It lies close to the Hindan, but the main site is raised, and is fairly healthy. The town is administered under Act XX of 1856, with an income of Rs. 1,000. Besides the *tahsīlī*, it contains three schools and a dispensary.

Charthāwal.—Town in the District and *tahsīl* of Muzaffarnagar, United Provinces, situated in 29° 33′ N. and 77° 36′ E., 7 miles north-west of Muzaffarnagar town. Population (1901), 6,236. Under native rule it was the head-quarters of an *āmil*. It is now a small agricultural town, administered under Act XX of 1856, with an income of about Rs. 1,500.

Jalālābād.—Old town in the Kairāna *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 37′ N. and 77° 27′ E., 21 miles from Muzaffarnagar town. Population (1901), 6,822. It is said to have been founded by a Pathān named Jalāl Khān in the reign of Aurangzeb. A mile away lie the ruins of the celebrated fort Ghausgarh, built by the Rohilla leader, Najīb Khān, with a beautiful mosque which was built by his son, Zābita Khān. Jalālābād was often sacked by the Marāthās during the rule of Zābita Khān, and a Marāthā still holds a small grant close by. During the Mutiny the Pathāns of this place remained quiet, and one of their leaders did good service as *tahsīldār* of THĀNA BHAWAN after its capture. The town is administered under Act XX of 1856, with an income of about Rs. 2,300. There are two schools, with more than 100 pupils.

Jānsath Town.—Head-quarters of the *tahsīl* of the same name in Muzaffarnagar District, United Provinces, situated in 29° 19′ N. and 77° 51′ E., 14 miles from Muzaffarnagar town. Population (1901), 6,507. The town is famous as the home of the Jānsath Saiyids, who held the chief power in the Delhi empire in the early part of the eighteenth century. Jānsath was sacked and destroyed by a Rohilla force, under the orders of the Wazīr Kamar-ud-dīn, in 1737, and many Saiyids were slain or exiled; but some of their descendants still live in the town. It is administered under Act XX of 1856, with an income of about Rs. 2,000. Jānsath contains a *tahsīlī*, an Anglo-vernacular school opened by private subscription, and a dispensary. Much has been done lately to improve the place by paving the streets and the drains.

Jhinjhāna.—Town in the Kairāna *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 31′ N. and 77° 13′ E., on the left bank of the Kathā, 30 miles from Muzaffarnagar town. Population (1901), 5,094. The town is the home of a family of Shaikhs who have resided here from an early date. It contains a *dargāh* of a Muhammadan saint built in 1495 and several monuments of the Shaikhs, the chief being a mosque and tomb built in 1623, decorated with coloured tiles. Jhinjhāna is administered under Act XX of 1856, with an income of about Rs. 1,700. It was formerly very dirty; and although the streets have recently been paved, it is still unhealthy.

Kairāna Town.—Head-quarters of the *tahsīl* of the same name in Muzaffarnagar District, United Provinces, situated in 29° 24′ N. and 77° 12′ E. It is the terminus of a metalled road from Muzaffarnagar town. The population is increasing slowly and was 19,304 in 1901. Mukarrab Khān, physician to Jahāngīr and Shāh Jahān, received the town and surrounding country as a grant. He built a *dargāh* and laid out a beautiful garden with a large tank, and the town also contains several mosques dating from the sixteenth and seventeenth centuries. Kairāna is built partly on the low-lying Jumna *khādar* and partly on the rising slope to the upland plain, and has a clean, well-paved bazar. The town was constituted a municipality in 1874. During the ten years ending 1901 the income and expenditure averaged Rs. 12,000. In 1903–4 the income was Rs. 16,000, chiefly derived from octroi (Rs. 12,000); and the expenditure was Rs. 18,000. Ornamental curtains are made here by pasting small pieces of looking-glass on coloured cloth. There is a considerable amount of traffic in grain with both the Punjab and the railway, and a small calico-printing

industry. Besides the *tahsīlī*, there are a *munsifī*, a dispensary, and two schools.

Kāndhla.—Town in the Budhāna *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 19′ N. and 77° 16′ E., near the Eastern Jumna Canal, 29 miles south-west of Muzaffarnagar town. Population (1902), 11,563. It is situated on low ground and the neighbourhood is swampy. The more important streets are metalled and drained. Kāndhla was constituted a municipality in 1872. The income and expenditure during the ten years ending 1901 averaged Rs. 6,700. In 1903-4 the income was Rs. 11,000, chiefly derived from octroi (Rs. 6,600); and the expenditure was Rs. 11,000. There is a considerable local trade in grain, cotton, and cloth, which is manufactured here. The *tahsīlī* school had 130 pupils in 1904.

Khataulī.—Town in the Jānsath *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 17′ N. and 77° 44′ E., on the North-Western Railway and on the road from Meerut to Roorkee. Population is increasing steadily, and was 8,695 in 1901. The town is of some age, and contains four large Jain temples and a large *sarai* built by Shāh Jahān. It first became of importance during the Bihār famine of 1874, when all the surplus grain in the District was exported from the railway station. The streets have recently been paved and masonry drains constructed. Khataulī is administered under Act XX of 1856, with an income of about Rs. 3,000. Its trade is chiefly connected with the export of grain and sugar, and is largely in the hands of Jain merchants. The *tahsīlī* school has 64 pupils, and an aided Jain school 38.

Mīrānpur.—Town in the Jānsath *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 17′ N. and 77° 57′ E., 20 miles from Muzaffarnagar town. Population (1901), 7,209. It is the home of a family of Saiyids, descended from a member of the Chhatraurī branch of the famous Bārha Saiyids. Early in 1858 it was attacked by the Bijnor rebels, but successfully held by British troops. Mīrānpur is administered under Act XX of 1856, with an income of about Rs. 2,000. At one time there was a large local trade in rice, sugar, salt, and grain; but the opening of the railway has diverted trade to Khataulī and Muzaffarnagar. Blankets are still made to a large extent, and also coarse blue pottery and papier mâché goods. There are two small schools.

Muzaffarnagar Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in

29° 28′ N. and 77° 41′ E., on the main road from Meerut to Roorkee and Hardwar, and on the North-Western Railway. The population is increasing rapidly: (1872) 10,793, (1881) 15,080, (1891) 18,166, (1901) 23,444. In 1901 Hindus numbered 12,847 and Musalmāns 9,519. The town was founded by the son of Muzaffar Khān, Khān-i-Jahān, in the reign of Shāh Jahān, about 1633, close to the site of an older town known as Sarwat. It remained a place of little importance, until in 1824 it became the head-quarters of a sub-collectorship of Sahāranpur District, and two years later Muzaffarnagar District was formed. It is a closely-built town, crowded with small streets, but is well situated on high land above the Kālī Nadī, to which the drainage is carried. Besides the ordinary offices, there are a town hall, high and middle schools, and male and female hospitals. There are no resident officials besides those of the ordinary District staff. The American Presbyterian and Reformed Methodist Missions have branches here. Muzaffarnagar was constituted a municipality in 1872. The income and expenditure during the ten years ending 1901 averaged Rs. 22,000. In 1903–4 the income was Rs. 35,000, chiefly derived from octroi (Rs. 21,000) and house tax (Rs. 6,000); and the expenditure was Rs. 46,000. A drainage and paving project was completed in 1903 at a cost of more than Rs. 30,000, and the town is now very well drained. The place owes its prosperity largely to the export trade in wheat and sugar, and the only considerable manufacture is that of blankets. Every year in March a horse show is held here. The high school contains 230 pupils, the *tahsīlī* school 160, and a girls' school 35.

Pur.—Town in the District and *tahsīl* of Muzaffarnagar, United Provinces, situated in 29° 39′ N. and 77° 51′ E., 16 miles north of Muzaffarnagar town on the metalled road to Roorkee. Population (1901), 6,384. The town is surrounded by fine groves and contains some good brick houses, but the drainage is defective. In the low waste land close by an important camp is formed for artillery practice every cold season. The town is administered under Act XX of 1856, with an income of about Rs. 1,500.

Shāmlī.—Town in the Kairāna *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 27′ N. and 77° 18′ E., on the metalled road from Muzaffarnagar town to Kairāna. Population (1901), 7,478. It was originally known as Muhammadpur Zanardār, and formed part of the grant made to Mukarrab Khān, physician to Jahāngīr and

Shāh Jahān. The town was built later by a follower of Mukarrab Khān's called Shyām. In 1794 it was the residence of a Marāthā commandant, who was suspected of intriguing with the Sikhs. Lakwā Dādā, the Marāthā governor, sent George Thomas against the town. Thomas stormed it, and killed the commandant and his principal adherents. In 1804 Colonel Burn was surrounded near this place by an overwhelming force of Marāthās, who were joined by the inhabitants, but he was relieved by the opportune advance of Lord Lake. During the Mutiny the *tahsīldār* of Shāmlī gallantly held the town and kept communications open for several months, but was defeated and slain by the Shaikhzādas of Thāna Bhawan in September, 1857. The head-quarters of the *tahsīl* and *munsifī* have been removed to KAIRĀNA, owing to a terrible epidemic of fever. The place was once a municipality, but decayed, and is now administered under Act XX of 1856, the income being about Rs. 2,500. Four schools are maintained.

Thāna Bhawan.—Town in the Kairāna *tahsīl* of Muzaffarnagar District, United Provinces, situated in 29° 35′ N. and 77° 25′ E., 18 miles north-west of Muzaffarnagar town on an unmetalled road. Population (1901), 8,861. In the *Ain-i-Akbarī* the *pargana* is called Thāna Bhīm; but the present name is said to be derived from an old temple of Bhawānī, which is still much resorted to. The town was a centre of disaffection in 1857, when the inhabitants, headed by their Kāzī, Mahbūb Alī Khān, and his nephew, Ināyat Alī, broke into open rebellion. Among other daring feats, they captured the *tahsīlī*, then at SHĀMLĪ, and massacred the 113 men who defended it. Thāna Bhawan was soon after taken by the Magistrate, with some Sikh and Gurkha levies, after a fight of seven hours. The walls and gates were levelled to the ground and no further disturbances took place. The town decayed after the Mutiny, but the population has increased during the last thirty years. It contains a primary school and some seventeenth-century mosques and tombs. It is administered under Act XX of 1856, the income from house tax being about Rs. 2,500.

Boundaries, configuration, and river system.

Meerut District (*Merath*).—District in the United Provinces, lying between 28° 33′ and 29° 18′ N. and 77° 7′ and 78° 12′ E., with an area of 2,354 square miles. It is bounded on the north by Muzaffarnagar District and on the south by Bulandshahr, while the Ganges divides it on the east from Morādābād and Bijnor, and the Jumna on the west from the

Punjab Districts of Karnāl and Delhi. On the banks of these great rivers are stretches of inferior low-lying *khādar* land. The rest of the District is, for the most part, a level upland, the edges of which are scored by ravines. This may be divided into three main tracts. The western division, stretching almost to the Upper Ganges Canal, has an extraordinarily rich and uniform soil, except immediately above the rivers Jumna and Hindan. East of this lies a shallow depression with poor natural drainage. The third tract, extending to the high banks of the Ganges, is characterized by the presence of sandy dunes, which are scattered in various directions in the eastern portion, but form a well-defined ridge in the west.

Besides the Jumna and the Ganges, the most important river is the HINDAN, which runs through the west of the District and has a considerable area of *khādar* land. Two small streams called Chhoiyā, and a cut called the Abū Nālā, carry off part of the drainage of the central depression and the eastern tract into the ill-defined bed of the KĀLĪ NADĪ (EAST). In the extreme east of the District the Būrhgangā, or 'old Ganges,' forms a chain of swamps close below the old high bank.

Geology. Meerut is situated entirely in the Ganges alluvium, and *kankar* and saline efflorescences are the only minerals.

Botany. The botany of the District presents no peculiarities. There is very little natural jungle, and grazing land is chiefly found in the Ganges and Jumna *khādars*, and to a less extent along the Hindan. The District is, however, well wooded, and groves cover 21 square miles. The commonest tree is the mango, but the *bel* and guava are largely grown for fruit, and the *shīsham* is planted in the road and canal avenues.

Fauna. Leopards are fairly common in the Ganges *khādar* and ravines, but tigers are extremely rare. Antelope are numerous in most parts of the District; Meerut is famous for wild hog, and the pig-sticking competition held annually for the Kādir (*khādar*) Cup in March or April is well-known. Other animals found include the wolf, fox, jackal, hog deer, and *nīlgai*. Game birds are numerous. Duck and teal are found along the Būrhgangā and other rivers, and in the larger swamps in the interior. Snipe, geese, black and grey partridges, quail, pigeons, and sand-grouse are also common.

Climate and temperature. The comparatively high latitude and elevated position of Meerut make it one of the healthiest Districts in the plains of India. From November to March the weather is cool and invigorating, hoar-frost being frequently found in January at an

early hour of the day. The hot westerly winds begin in April, and the rains set in about the end of June. The mean temperature is about 77°, ranging from 57° in January to 91° in May or June.

The District is practically the meeting-place of the Bengal and Bombay monsoon currents. The annual rainfall for thirty years has averaged 29 inches; but it varies in different parts, and the south-west of the District receives less than the north-east. Considerable fluctuations occur, and in five years ending 1895 the average was 47 inches, while it sometimes falls below 20 inches. **Rainfall.**

The District is connected with the earliest traditions of the Lunar race of the Hindus. A small hamlet on the high bank of the Ganges is believed to mark the main site of Hastināpur, the capital of the Kauravas and Pāndavas, which was washed away by the Ganges. The Asoka pillar, now standing on the ridge at DELHI, is said to have been removed from near Meerut city, and remains of Buddhist buildings have been discovered near the Jāma Masjid. In the eleventh century A.D. the south-western part of the District was held by Har Dat, the Dor Rājā of Baran or BULANDSHAHR, who was defeated by Mahmūd of Ghazni in 1018. According to tradition, the north of the District was held by the Tagās, who were driven south and east by the Jāts. The Meos were called in by the Gahlots and expelled the Dors. The first undoubted Muhammadan invasion was that of Kutb-ud-dīn, the general of Muhammad Ghorī, in 1192, when the city of Meerut was taken and all the Hindu temples were converted into mosques. Under succeeding Sultāns we hear little of the District, which may therefore be considered to have escaped any notable misfortune, until the Mongol invasion of 1398. Tīmūr swooped down upon Meerut with more than ordinary barbarity, and was met with equal Hindu obstinacy. At the fort of Lonī, many of the Rājputs burned their houses, with their women and children within, and then sallied out to sell their lives as dearly as they could. After the capture, Tīmūr ordered the massacre of all the Hindu prisoners in his camp, whom he himself represents as numbering 100,000 persons. He then went on to the sack of Delhi, and returned to the town of Meerut, then ruled by an Afghān chief named Iliās. Tīmūr first made his approaches by mining, and on the second day carried the walls by storm. All the males were put to the sword, and the fortifications and houses of the Hindus razed to the ground. Thence his army proceeded northward along the **History.**

two great rivers, taking every fort, town, and village they passed.

The firm establishment of the Mughal dynasty in the sixteenth century, and the immediate neighbourhood of their court, gave Meerut a period of internal tranquillity and royal favour. The valley of the Jumna became a favourite hunting resort for the imperial family and their great officers. Pleasure-gardens and game-preserves were established in the low-lying tracts just opposite Delhi; while it was for the purpose of watering one of these that the Eastern Jumna Canal was first designed. After the death of Aurangzeb, Meerut, though nominally subject to the Delhi emperor, was really ruled by local chieftains: the Saiyids of Muzaffarnagar in the north, the Jāts in the south-east, and the Gūjars along the Ganges and in the south-west. It was also exposed to the same horrors of alternate Sikh and Marāthā invasions which devastated the other parts of the Upper Doāb; while the Jāts and Rohillas occasionally interposed, to glean the remnant of the plunder which remained from the greater and more fortunate hordes.

From 1707 till 1775, Meerut was the scene of perpetual strife; and it was only rescued from anarchy by the exertions of a European military adventurer, Walter Reinhardt or Sombre, one of the many soldiers of fortune who were tempted to try their destinies in Upper India during the troubled decline of the Delhi dynasty. After perpetrating the massacre at PATNA, 1763, Reinhardt established himself at SARDHANA in one of the northern *parganas* of Meerut; and on his death in 1778 left his domains to his widow, generally known as the Begam Sumrū, from the assumed name of her husband. This remarkable woman was of Arab descent, and originally followed the trade of a dancing-girl. After her marriage with Reinhardt, she was baptized into the Roman Catholic Church, to which she became a considerable benefactress. Meanwhile, the southern portion of the District still remained in its anarchic condition under Marāthā rule, until the fall of Delhi in 1803, when all the country in the possession of Sindhia between the Jumna and the Ganges was ceded to the British. The Begam, who had up till that time given assistance to Sindhia, thereupon made submission to the new Government, to which she remained constantly faithful till her death in 1836.

Meerut has few historical incidents to show during the early British period; but it has been rendered memorable by

the active part which it took in the Mutiny of 1857, being the place where the first outbreak occurred in Upper India. From the beginning of the year disquieting rumours had been afloat among the native troops, and the greased-cartridge fiction had spread widely through their ranks. In April, a trooper named Brijmohan informed his comrades that he had used the new cartridges, and all would have to do so shortly; but within a few days Brijmohan's house was set on fire, and from that time acts of incendiarism became common. On May 9, some men of the 3rd Bengal Cavalry, who had refused to use the cartridges, were condemned to ten years' imprisonment. Next day, Sunday, May 10, their comrades took the fatal determination to mutiny; and at 5 p.m. the massacre of Europeans in the city began.

The subsequent events belong rather to imperial than to local history, and could not be adequately summed up in a brief *résumé*. It must suffice to say that, throughout the Mutiny, the cantonments remained in the hands of the British forces, and the District was on the whole kept fairly clear of rebels. Meerut was more than once threatened by Walīdād Khān, the rebellious chieftain of Mālāgarh in Bulandshahr District; but his demonstrations were never very serious. The greatest peril lay in the threatened attack by rebels from Rohilkhand, which was successfully warded off. Indeed, it is a noticeable fact that the very city where the Mutiny broke out, and where the first massacre took place, was yet held by a small body of Europeans, surrounded by thousands of disaffected natives, under the very shadow of Delhi, from the beginning to the end of that desperate struggle.

Archaeology. Though many places are connected by tradition with the events related in the Mahābhārata, such as Hastināpur, BĀGHPAT, GARHMUKTESAR, PARĪCHHATGARH, Pūth, and Barnāwā, very ancient temples or other archaeological remains have not been discovered. A mosque built by Balban stands at Garhmuktesar, and there are a few Muhammadan buildings dating from the Mughal dynasty at MEERUT.

The people. The District contains 27 towns and 1,494 villages. The population is rising steadily. The number at the last four enumerations was as follows: (1872) 1,276,167, (1881) 1,313,137, (1891) 1,391,458, and (1901) 1,540,175. The increase in the last decade (10·6 per cent.) was six times as great as the Provincial average. There are six *tahsīls*—MEERUT, GHĀZIĀBĀD, MAWĀNĀ, BĀGHPAT, SARDHANA, and HĀPUR—the head-quarters of each being at a town of the

same name. The chief towns are the municipalities of MEERUT, the District head-quarters, HĀPUR, SARDHANA, GHĀZIĀBĀD, MAWĀNĀ, and the 'notified areas' of BARAUT, BĀGHPAT, PILKHUĀ, and SHĀHDARĀ. The principal statistics of population in 1901 are shown below:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Meerut	364	5	280	342,143	940	+ 4·9	18,048
Ghāziābād	493	9	332	276,518	562	+ 11·9	7,122
Mawānā	431	4	248	200,399	465	+ 12·7	3,398
Bāghpat	405	6	218	297,506	735	+ 14·4	7,285
Sardhana	250	1	124	180,141	721	+ 6·8	5,198
Hāpur	411	2	292	243,468	592	+ 14·8	6,910
District total	2,354	27	1,494	1,540,175	654	+ 10·7	47,961

Of the total population, 74 per cent. are Hindus, 23 per cent. Musalmāns, 1 per cent. Jains, 8 per cent. Christians, while Aryas number 5,000. The great density in the Meerut *tahsīl* is due to the large city of Meerut, while Mawānā, which has the lowest density, includes a considerable area of Ganges *khādar*. More than 99 per cent. of the inhabitants speak the Hindustāni dialect of Western Hindī.

Castes and occupations.

Among Hindus the most numerous caste is that of the Chamārs (leather-dressers and labourers), who number 223,000, and form 20 per cent. of the Hindu population. They are followed by the Jāts, 184,000, who are the most industrious agriculturists and hold a larger area both as proprietors and cultivators than any other caste. Brāhmans number 121,000; Rājputs, 79,000; Baniās, 59,000; Gūjars, 58,000; Tagās, 41,000; Ahīrs, 25,000; and Bhangīs or sweepers, 44,000. The Jāts, Gūjars, and Tagās are not found in the centre and east of the Provinces, and the Tagās (agriculturists) are more numerous here than in any other District. The most numerous Muhammadan tribe is that of the Shaikhs, 50,000; followed by Rājputs, 46,000; Julāhās (weavers), 33,000; Pathāns, 19,000; Saiyids, 15,000; and Tagās, 20,000. More than 49 per cent. of the population are supported by agriculture, 11 per cent. by general labour, 10 per cent. by personal services, 3 per cent. by weaving, and nearly 3 per cent. by grain-dealing.

Christian missions.

In 1901 there were 9,315 native Christians in the District, of whom 7,400 were Methodists and 1,100 Roman Catholics.

The four missions at work are the Roman Catholic, the Church Missionary Society, the American Methodist, and the Reformed Presbyterian Churches. Sardhana is the chief station of the Roman Catholics, who commenced work there at the end of the eighteenth century under the Begam Sumrū. The Church Missionary Society's mission dates from 1815, and the other two missions are of recent institution. The latter admit converts easily, and chiefly labour among the lower classes.

General agricultural conditions.

As is usual in the Upper Doāb, the Jāts are the best cultivators, and all good land is manured whether near the village site or not. The soil varies from sand to thick clay; but the greater portion is a fertile loam, and most of the District is capable of irrigation from canals or wells. The Ganges and Jumna and, to a smaller extent, the Hindan *khādars* are precarious tracts; but the District as a whole ranks as one of the finest in the United Provinces.

Chief agricultural statistics and principal crops.

The tenures are those common in the United Provinces. More than 50 per cent. of the total area is held in *bhaiyāchārā* tenure; nearly 22 per cent. in imperfect *pattīdāri*; and the rest in perfect *pattīdāri* and *zamīndāri* in equal proportions. The main statistics of cultivation in 1903-4 are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Meerut	364	277	122	29
Ghāziābād	493	349	180	69
Mawāna	431	273	89	94
Bāghpat	405	336	190	22
Sardhana	250	201	82	18
Hāpur	411	320	112	34
Total	2,354	1,756	775	266

Wheat and gram are the most important food-grains, covering an area of 634 and 241 square miles respectively, or 36 and 14 per cent. of the net area cropped. Maize and *jowār*, with 189 and 164 square miles, are also important. The most valuable of the other crops are sugar-cane (179 square miles) and cotton (60 square miles).

Improvements in agricultural practice.

In the *khādar*, cultivation depends chiefly on the season, and in dry years considerable areas may be sown. The striking feature of the District during the last thirty years is the increase by about 50 per cent. in the area under sugar-cane, which is now the crop from which the tenants pay their rent

and the *zamīndārs* their revenue. The area cropped in two consecutive harvests in the same year, especially with maize in the autumn and wheat mixed with peas, &c., in the spring, is also increasing. The area under cotton has declined, and indigo is grown only by a few of the large *zamīndārs*. There is a small, but steady, demand for loans under the Agriculturists' Loans Act, amounting to about Rs. 2,000 annually; but advances under the Land Improvement Loans Act are rarely taken. Out of Rs. 16,000 advanced during the ten years ending 1900, Rs. 11,000 was advanced in the last year. A great deal has been done to improve the drainage of the District, by deepening and straightening some of the rivers, such as the East Kālī Nadī and its tributaries, the two Chhoiyās, and by making cuts in other places. In the south-west of the District an embankment has been made to prevent flooding from the Jumna.

Cattle, horses, and sheep.

Private enterprise has done something to improve the ordinary inferior breed of cattle, and several *zamīndārs* have imported good bulls from HISSĀR. The best of the cattle have been imported from the same place, but many good animals are now bred locally. Horse-breeding has become an important business. Stables for a Government stud were established at Bābūgarh near Hāpur in 1823, and many *zamīndārs* turned their attention to horse-breeding. The mares were subsequently disposed of, though stallions are still kept by Government. There has been a considerable improvement in the last thirty years, and chargers are bred for the native cavalry and mounted police. Besides the stallions at Bābūgarh, twelve others were maintained by Government in 1903, when the supervision of horse-breeding was transferred from the Civil Veterinary to the Remount department. Good mules are also bred from Government donkey stallions. The sheep and goats of the District are of the ordinary inferior breed.

Irrigation.

About 40 to 60 per cent. of the cultivated area is irrigated according to the season. In 1903–4 canals irrigated 494 square miles, wells 271, and other sources 10. The west of the District is supplied by the EASTERN JUMNA CANAL, the centre by the UPPER GANGES CANAL, and the east by the Anūpshahr branch of the latter. Canals have to a large extent superseded wells; and the area irrigated in the eastern tract has benefited especially, as well-irrigation was rare. It is only in parts of the Sardhana and Hāpur *tahsīls* that well-irrigation supplies a larger area than canals.

The chief mineral product is *kankar*, which occurs in blocks as well as in nodules, and is used for road-metalling and for making lime, as well as for building purposes. Up to 1833 salt was largely manufactured, and a little saltpetre is still prepared. The saline efflorescence called *reh*, which contains carbonate of soda, is used for making country glass, and also in dyeing and washing clothes. **Minerals.**

The most important industry is tanning, though there is no large tannery. Much of the out-turn is exported to Cawnpore and Calcutta, but a fair amount is made up on the spot into shoes and sent to Delhi. Cotton-weaving is carried on largely at Meerut and several other places, but only for the local market. More than half the raw cotton grown is exported to Cawnpore and Calcutta. Two cotton presses at Hāpur employed 263 persons in 1904. The North-West Soap Company, Limited, at Meerut employs about forty hands, and an ice factory about twenty. There are also eleven indigo factories, and a small flour-mill and oil-mill. Blankets are made at Nirpura in the Sardhana *tahsīl*, ornamental pottery at Bahādurgarh in the Hāpur *tahsīl*, and cheap cutlery, glass bangles, jewellery, and furniture are turned out at a few centres. **Arts and manufactures.**

The exports consist chiefly of wheat, sugar, oilseeds, and cotton, while the imports are metals, cotton cloth, building materials, *ghī*, drugs, and spices. The municipalities are the chief centres of trade, especially Meerut, Hāpur, and Ghāziābād. Internal traffic is very large. The sugar goes largely to the Punjab and Rājputāna, while wheat is exported to Europe. A large proportion of the trade finds its way to Delhi. Timber and bamboos are brought to Meerut from the forests farther north by the Upper Ganges Canal and the Ganges. **Commerce.**

Trade has been greatly fostered by the improvement of communications. The oldest railway is the East Indian, which just cuts across the south-west corner of the District. It was followed by the North-Western, which passes through the middle. In 1900 a branch of the Oudh and Rohilkhand Railway was opened, which traverses the southern part. Another important branch of the same line connects Meerut city with Hāpur, and will be continued through BULANDSHAHR to KHURJA. The rich tract between the North-Western Railway and the Jumna is to be opened up by a light railway from Shāhdara on the East Indian Railway opposite Delhi to Sahāranpur. **Railways and roads.**

The total length of metalled roads is 216 miles, which is only exceeded in one District in the Provinces; of these,

92 miles are Provincial and the rest local. There are also 392 miles of unmetalled roads maintained from Local funds. There are avenues of trees along about 180 miles. The western part of the District is most in need of better communications, which will be supplied by the light railway referred to above.

Famine. The Upper Doāb was ravaged by famine at frequent intervals before British rule, and the disorder of the eighteenth century frequently caused distress; but Meerut is not specially mentioned by the native historians. There was frequent distress in the early years of the nineteenth century, and the famine of 1837 was exceptionally severe. In 1860, after the disastrous effects of the Mutiny, famine was imminent; but the railway works in the south-east of the District gave employment to thousands. The famines of 1868 and later years hardly affected the District adversely, and relief works have chiefly been required for starving immigrants. This result is largely due to the perfect system of canal-irrigation, and the sturdy nature of the peasantry. In 1896-7, when famine raged elsewhere, the Jāts of Meerut prayed openly for a continuance of the high prices which gave them such handsome profits.

District sub-divisions and staff. The Collector is usually assisted by a Joint and Assistant Magistrate belonging to the Indian Civil Service, and by five Deputy-Collectors recruited in India, all residing at Meerut. There is a *tahsīldār* at the head-quarters of each of the six *tahsīls*.

Civil justice and crime. The District and Sessions Judge has jurisdiction over the whole District, and also civil jurisdiction over the Sikandrābād *tahsīl* of Bulandshahr District. He is aided by an Assistant Judge, a Subordinate Judge, and two Munsifs. In 1904 there were two additional Munsifs, and an additional Judge was sanctioned for three years. A few village Munsifs have also been appointed. There is a special Cantonment Magistrate, with an assistant, at Meerut. As usual, the most common forms of crime are burglary and petty theft; but murder, robbery, and dacoity are more frequent than in most Districts. Cases of rioting and criminal trespass are very common, and the Gūjars in the Ganges and Jumna *khādars* are notorious cattle thieves. Female infanticide was practised by Gūjars and Jāts, especially the former, but has nearly died out.

Land revenue administration. The area comprised in the District was acquired in 1803, and was at first administered as part of Sahāranpur, of which it eventually formed the southern division with a Collector at Meerut. In 1818 a separate District was made, which was

further subdivided in 1824 by the removal of parts of what are now Bulandshahr and Muzaffarnagar. The early land revenue settlements were simply based on the previous demands, and consisted of two for a year each and two for three years each, the last being extended up to 1815, when a settlement was effected for five years. No records exist of the subsequent arrangements till the first regular settlement was made between 1835 and 1837. There were signs of the coming competition for land, but rents were still mostly in kind. The assessment was based on rates ascertained by converting average produce at market values, the rates being modified according to the condition of villages. A large part of the District had formed the *jāgīr* of the Begam Sumrū, which lapsed in 1836. Her system had been one of rackrent, qualified by an intimate knowledge of the cultivators and liberal advances. The total demand fixed for the whole District was 18·3 lakhs. The second settlement was made between 1865 and 1870, when the demand was raised to 21·8 lakhs, though the share of the rental 'assets' taken had been reduced from 70 to 50 per cent. In this settlement, also, rates were calculated on produce, having regard to soil classification. The last settlement was completed in 1901. It was based on the rental 'assets,' but involved a careful soil classification and the fixing of standard circle rates, which were of special importance, as nearly half of the area was not subject to cash rents, most of it being under proprietary cultivation. A very minute analysis of the rents actually paid was thus required, and the proportionate rental value of different soils was ascertained. The rents paid by occupancy tenants were enhanced in many cases, and the revenue finally fixed was 29·9 lakhs, representing 48 per cent. of the corrected rental 'assets.' The incidence per acre of cultivation is Rs. 2–14–0, being the highest for any District in the Provinces. It varies in different parts from Rs. 2 near the Ganges *khādar* to more than Rs. 4 in the west. The collections on account of land revenue and total revenue are shown below, in thousands of rupees :—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	22,25	22,11	26,30	27,95
Total revenue . .	27,04	34,00	40,57	44,21

Local self-government.

Besides the five municipalities, Meerut, Ghāziābād, Hāpur, Sardhana, and Mawānā, four other towns which were formerly

municipalities became 'notified areas' in April, 1904. There are also eighteen towns administered under Act XX of 1856. Beyond the limits of these places, local affairs are managed by the District board, which has an income of more than 2 lakhs. In 1903–4 the expenditure amounted to 2·6 lakhs, of which 1·1 lakhs was spent on roads and buildings.

Police and jails. The District Superintendent of police is aided by an Assistant and six inspectors. There are 160 other officers and 633 men belonging to the regular police, 439 municipal and town police, and 2,267 village and road police. The District jail contained a daily average of 574 prisoners in 1903.

Education. In 1901 the percentage of the population able to read and write was 3·1 (5·6 males and 0·3 females), which is exactly the Provincial average. The proportion is, however, unduly raised by the considerable number of Jains, Aryas, and Christians in the District, and is distinctly lower in the case of Hindus (2·7) and Muhammadans (2). In 1880–1 there were 214 public institutions with 6,677 pupils, and these had increased to 248 institutions with 9,849 pupils in 1900–1. In 1903–4, 277 such schools contained 12,850 pupils, of whom 550 were girls; and there were besides 391 private institutions with 5,235 pupils. MEERUT CITY contains an Arts college, a normal school, and three high schools. Of the public institutions, 162 are managed by the District or municipal boards and only 2 by Government. About half the total expenditure on education of Rs. 96,000 is met from Local and municipal funds, and a quarter from fees.

Hospitals and dispensaries. In 1903 there were 14 hospitals and dispensaries, with accommodation for 183 in-patients. In the same year 134,000 cases were treated, of whom 1,839 were in-patients, and 10,214 operations were performed. The expenditure was Rs. 19,000, chiefly met from Local and municipal funds.

Vaccination. More than 50,000 persons were successfully vaccinated in 1903–4, showing a rate of 33 per 1,000 of population. Vaccination is compulsory only in the municipalities and in the cantonment of Meerut.

[H. R. Nevill, *District Gazetteer* (1904); R. W. Gillan, *Settlement Report* (1901).]

Meerut Tahsīl.—Central northern *tahsīl* of Meerut District, United Provinces, co-extensive with the *pargana* of Meerut, and lying between 28° 52′ and 29° 14′ N. and 77° 27′ and 77° 52′ E., with an area of 364 square miles. On the west the Hindan divides it from the Bāghpat and part of the Sardhana

tahsīls, but other boundaries are artificial. The population rose from 326,054 in 1891 to 342,143 in 1901. There are 280 villages and five towns, of which MEERUT (population, 118,129), the District and *tahsīl* head-quarters, and LĀWAR (5,046) are the most important. In 1903–4 the demand for land revenue was Rs. 5,22,000, and for cesses Rs. 87,000. The *tahsīl* has the highest density of population (940 persons per square mile) in the District (average 654), owing to the inclusion of Meerut city. Along the Hindan there is a narrow stretch of *khādar* which is liable to deterioration, but more than half the *tahsīl* is a level upland of first-class soil. The eastern portion is intersected by the East Kālī Nadī and its tributaries the two Chhoiyās and the Abū Nālā, which flow in badly-defined channels. The channel of the Kālī Nadī has been deepened and straightened, and other cuts have been made; but the drainage is still defective, and in this tract cultivation is continually interrupted by patches of *reh*. It is sandy towards the north, and a well-defined sandy ridge strikes from north to south on the eastern border. Between the Hindan and the Kālī Nadī the Upper Ganges Canal provides ample means of irrigation; but east of the Kālī Nadī the villages depend chiefly on wells, most of which are of masonry. In 1903–4 the area under cultivation was 277 square miles, of which 122 were irrigated.

Ghāziābād Tahsīl.—South-western *tahsīl* of Meerut District, United Provinces, comprising the *parganas* of Jalālābād, Lonī, and Dāsnā, and lying between 28° 33′ and 28° 56′ N. and 77° 13′ and 77° 46′ E., with an area of 493 square miles. The Jumna forms the western boundary. The population rose from 247,141 in 1891 to 276,518 in 1901. The *tahsīl* contains 332 villages and nine towns, of which the most important are GHĀZIĀBĀD (population, 11,275), the *tahsīl* head-quarters, PILKHUĀ (5,859), SHĀHDARA (5,540), and FARĪDNAGAR (5,620). In 1903–4 the demand for land revenue was Rs. 4,85,000, and for cesses Rs. 80,000. The *tahsīl* is one of the poorest in the District, the density of population being only 562 persons per square mile, while the District average is 654. The Hindan passes through the western portion and the Chhoiyā, a tributary of the East Kālī Nadī, through the east. The worst tract, a sandy area cut up by ravines, lies between the Hindan and the Jumna; but the north-east corner, which forms a badly-drained basin, is also very poor. On the other hand, communications by both railway and road are excellent. The *tahsīl* is well supplied by irrigation from the Upper Ganges

and Eastern Jumna Canals. In 1903-4 the area under cultivation was 349 square miles, of which 180 were irrigated. Indigo is a more important crop here than elsewhere, while sugar-cane is less grown than in the rest of the District.

Mawānā Tahsīl.—North-eastern *tahsīl* of Meerut District, United Provinces, comprising the *parganas* of Hastināpur and Kithor, and lying between 28° 50′ and 29° 16′ N. and 77° 47 and 78° 8′ E., with an area of 431 square miles. The population rose from 177,868 in 1891 to 200,399 in 1901. There are 248 villages and four towns, the largest of which are MAWĀNĀ (population, 9,207), the *tahsīl* head-quarters, PARĪCHHATGARH (6,278), and PHALAUDA (5,214). In 1903-4 the demand for land revenue was Rs. 3,56,000, and for cesses Rs. 57,000. The *tahsīl* is the most sparsely populated in the District, containing only 465 persons per square mile against an average of 654. It consists of two distinct portions. The greater part lies in the upland area, which descends by a series of ravines to the Ganges *khādar* on the east. The uplands are intersected by well-marked ridges of sand, and have profited enormously by the irrigation supplied from the Anūpshahr branch of the Upper Ganges Canal, as wells are difficult and costly to make. The *khādar* is damp, and immediately below the edge of the upland lies a series of swamps marking an old bed of the Ganges, which now flows on the eastern boundary; a great part of it is fit only for grazing. In 1903-4 the area under cultivation was 273 square miles, of which 89 were irrigated.

Bāghpat Tahsīl.—North-western *tahsīl* of Meerut District, United Provinces, comprising the *parganas* of Bāghpat, Baraut, Kutānā, and Chhapraulī, and lying between 28° 47′ and 29° 18′ N. and 77° 7′ and 77° 29′ E., with an area of 405 square miles. The population rose from 259,656 in 1891 to 297,506 in 1901. There are 218 villages and six towns, the chief of which are BARAUT (population, 7,703), BĀGHPAT (5,972), the *tahsīl* head-quarters, KHEKRĀ (8,918), and CHHAPRAULĪ (7,058). In 1903-4 the demand for land revenue was Rs. 6,65,000, and for cesses Rs. 1,07,000. The density of population is high, being 735 persons per square mile. The *tahsīl* lies between the Jumna and Hindan; but even the narrow *khādars* of those rivers are fairly fertile, and a great part consists of an excellent loam, while ample irrigation is provided by the Eastern Jumna Canal. In 1903-4 the area under cultivation was 336 square miles, of which 190 were irrigated.

Sardhana Tahsīl.—*Tahsīl* of Meerut District, United

Provinces, comprising the *parganas* of Sardhana and Barnāwa, and lying between 29° 1′ and 29° 16′ N. and 77° 19′ and 77° 43′ E., with an area of 250 square miles. The population rose from 168,692 in 1891 to 180,141 in 1901. There are 124 villages and only one town, SARDHANA (population, 12,467), the *tahsīl* head-quarters. In 1903–4 the demand for land revenue was Rs. 3,70,000, and for cesses Rs. 59,000. The *tahsīl* is thickly populated, supporting 721 persons per square mile. It lies in the north of the uplands of the District, and its two *parganas* are separated by the river Hindan, which is also joined by the Krishnī. Both these rivers are fringed with ravines; but the *tahsīl* is a fertile tract, well irrigated by the Upper Ganges and Eastern Jumna Canals. In 1903–4 the area under cultivation was 201 square miles, of which 82 were irrigated.

Hāpur Tahsīl.—South-eastern *tahsīl* of Meerut District, United Provinces, comprising the *parganas* of Hāpur, Sarāwā, Garhmuktesar, and Pūth, and lying between 28° 35′ and 28° 54′ N. and 77° 41′ and 78° 12′ E., with an area of 411 square miles. The population rose from 212,047 in 1891 to 243,468 in 1901. There are 292 villages and two towns, HĀPUR (population, 17,796), the *tahsīl* head-quarters, and GARHMUKTESAR (7,616). In 1903–4 the demand for land revenue was Rs. 4,04,000, and for cesses Rs. 68,000. The density of population is low for this District, being only 592 persons per square mile. On the east there is a considerable area of *khādar* land bordering on the Ganges, which forms the eastern boundary. Above this lies a broad stretch of upland, much of which is intersected by ridges of sand; but irrigation from the Anūpshahr branch of the Upper Ganges Canal has rendered the cultivation of most of this productive. In the east the Kālī Nadī runs through high *bhūr*, and other streams flow in narrow deeply cut channels. Many drains have been made to carry off the flood-water from above, but the tract is still precarious. In 1903–4 the area under cultivation was 320 square miles, of which 112 were irrigated.

Sardhana Estate.—An important estate in Meerut District, United Provinces. The area of the estate is about 28 square miles. The total demand for rent and other dues in 1904 was 1·3 lakhs, while the Government land revenue and cesses amounted to Rs. 53,000. The head-quarters of the estate are at SARDHANA TOWN. It belongs to a family of Muswī Saiyids, who claim descent from Alī Mūsā Razā, the eighth Imām. These Saiyids resided at Paghmān near Kābul, but were ex-

pelled on account of services rendered to Sir Alexander Burnes in his Kābul mission, and subsequently to the British in the retreat from Kābul. A pension of Rs. 1,000 a month was given to the family, which settled at Sardhana. During the Mutiny Saiyid Muhammad Jān Fishān Khān, the head of the family, raised a body of horse and did good service both in Meerut District and before Delhi. As a reward the title of Nawāb Bahādur, and confiscated estates assessed at Rs. 10,000 per annum, were conferred on Jān Fishān Khān, with concessions as to the revenue assessed. The pension was also made permanent. During the lifetime of the first Nawāb, and for some time after, the family added largely to the estate, but speculations in indigo and personal extravagance caused losses. The estates were taken under the Court of Wards in 1895, and in 1901 the debts, amounting to 10 lakhs, were paid off by a loan from Government. The present Nawāb, Saiyid Ahmad Shāh, and his two predecessors were sons of Jān Fishān Khān, who died in 1864.

Bāghpat Town.—Head-quarters of the *tahsīl* of the same name, in Meerut District, United Provinces, situated in 28° 57′ N. and 77° 13′ E., near the Jumna, 30 miles west of Meerut city by a metalled road. Population (1901), 5,972. Bāghpat is identified with the Vyāghraprastha, or 'place of tigers' of the Mahābhārata, and its name is said to have been changed from Bāgpat to Bāghpat by one of the Delhi emperors. The town is divided into two portions: the *kasba* or agricultural quarter, and the *mandī* or commercial quarter. Besides the *tahsīlī*, it contains a dispensary, and a branch of the American Methodist Mission. From 1869 to 1904 the place was administered as a municipality, with an average income and expenditure of Rs. 6,000, the chief tax being octroi. It has now been constituted a 'notified area.' Formerly Bāghpat was the chief centre of the sugar trade with the Punjab, but Meerut and other towns have now taken its place to a large extent. In 1904 it contained three schools with 137 pupils.

Baraut.—Town in the Bāghpat *tahsīl* of Meerut District, United Provinces, situated in 29° 6′ N. and 77° 16′ E., 27 miles north-west of Meerut city. Population (1901), 7,703. During the Mutiny some of the Jāts who owned the town were conspicuous for disloyalty, and their property was confiscated and now forms part of the SARDHANA ESTATE. The town is situated in a network of canal distributaries, and irrigation is forbidden near it for sanitary considerations. The American Presbyterian Mission has a branch here. Baraut was adminis-

tered as a municipality from 1870 to 1904, the average income and expenditure being about Rs. 6,500. Under its new constitution as a 'notified area,' a tax on circumstances and property has been substituted for octroi. Iron buckets and cauldrons are made here, and there was formerly a large trade in *ghī* and safflower. In 1904 the town contained a middle school with 120 pupils, and three aided primary schools with 140 pupils.

Chhapraulī.—Town in the Bāghpat *tahsīl* of Meerut District, United Provinces, situated in 29° 12′ N. and 77° 11′ E., 35 miles north-west of Meerut city. Population (1901), 7,058. It is said to have been founded by Jāts in the eighth century. In the eighteenth century the Jāts of Mīrpur, who had been almost ruined by the incursions of the Sikhs, migrated here, and added to the population and prosperity of the town. There is a large colony of Jain Baniās, who are people of some wealth. The town is administered under Act XX of 1856, with an income of about Rs. 2,000. It is increasing in importance as a centre for the collection and export of wheat and sugar. There is a primary school.

Farīdnagar.—Town in the Ghāziābād *tahsīl* of Meerut District, United Provinces, situated in 28° 46′ N. and 77° 41′ E., 16 miles south-west of Meerut city. Population (1901), 5,620. It was founded by Farīd-ud-dīn Khān in the reign of Akbar. It is administered under Act XX of 1856, with an income of about Rs. 1,600, and contains a primary school.

Garhmuktesar.—Town in the Hāpur *tahsīl* of Meerut District, United Provinces, situated in 28° 47′ N. and 78° 6′ E., near the Ganges, on the Oudh and Rohilkhand Railway and the Delhi-Morādābād road. Population (1901), 7,616. The place is said to have been part of Hastināpur, the great city of the Kauravas; but the site now pointed out as Hastināpur is 25 miles away. It contains an ancient fort, which was repaired by a Marāthā leader in the eighteenth century. The name is derived from the great temple of Mukteswara Mahādeo, dedicated to the goddess Gangā, which consists of four principal shrines, two on the Ganges cliff and two below it. Close by is a sacred well whose waters are said to cleanse from sin, surrounded by eighty *satī* pillars. The principal festival is held at the full moon of Kārtik, when about 200,000 pilgrims collect, the numbers being much larger at intervals of six, twelve, and forty years. The cost of the fair is met from a tax on carts and cattle, and the rent of shops. Horses were formerly exhibited, but the numbers are decreasing. On the other hand,

mules are now brought in increasing numbers. The town also contains a mosque built by Ghiyās-ud-dīn Balban in 1283, and a branch of the American Methodist Mission. Garhmuktesar is administered under Act XX of 1856, with an income of about Rs. 2,000. There is little trade except in timber and bamboos, which are rafted down the river from the Dūn and Garhwāl.

Ghāziābād Town.—Head-quarters of the *tahsīl* of the same name in Meerut District, United Provinces, situated in 28° 40′ N. and 77° 26′ E., on the grand trunk road from Calcutta to Peshāwar, and a junction for the East Indian, North-Western, and Oudh and Rohilkhand Railways. Population (1901), 11,275. It was founded in 1740 by the Wazīr Ghāzī-ud-dīn, son of Asaf Jāh, ruler of the Deccan, and was formerly called Ghāzī-ud-dīn-nagar. In 1763 Sūraj Mal, the Jāt Rājā of Bharatpur, met his death at the hands of the Rohillas near this place. In May, 1857, a small British force from Meerut encountered and defeated the Delhi rebels, who had marched out to hold the passage of the Hindan. The main site contains two broad metalled bazars at right angles, with masonry drains and good brick-built shops. Extensions have recently been made, including two fine markets, called Wrightganj and Wyerganj, after the Collectors who founded them. The police station and town hall are located in the large *sarai* built by Ghāzī-ud-dīn. There is also a dispensary. Near the station the railway companies have built several barracks and houses. The Church Missionary Society and the American Methodists have branches here. Ghāziābād has been a municipality since 1868. During the ten years ending 1901 the income and expenditure averaged Rs. 13,000. In 1903–4 the income was Rs. 17,000, chiefly derived from octroi (Rs. 13,000), and the expenditure was Rs. 18,000. There is a considerable trade in grain, hides, and leather. The town contains an Anglo-vernacular school, supported by the Church Missionary Society, with 120 pupils in 1904, a *tahsīlī* school with 147, eight aided primary schools with 211, and a girls' school with 27 pupils.

Hāpur Town (or Hāpar). — Head-quarters of the *tahsīl* of the same name in Meerut District, United Provinces, situated in 28° 43′ N. and 77° 47′ E., on the metalled road from Meerut to Bulandshahr, and on the Morādābād-Delhi branch of the Oudh and Rohilkhand Railway. The population rose from 14,977 in 1891 to 17,796 in 1901. Hindus number 10,038 and Musalmāns 7,518. The town is said to have

been called Harīpur after Har Dat, the Dor chieftain who founded it late in the tenth century; but another derivation is from *hāpar*, meaning 'the orchard.' It formed part of the *jāgīr* of Perron, the French general in the service of the Marāthā chief Sindhia. He established a system of grants for his disabled veterans, which was maintained by the British for many years. In 1805 Ibrāhīm Alī, the *tahsīldār*, defended the place against Amīr Khān, the Pindāri freebooter. During the Mutiny, Walīdād Khān of Mālāgarh threatened Hāpur, but was obliged to retire by the loyal Jāts of Bhatauna. The town is surrounded by several fine groves, and the site in the centre near the Jāma Masjid, which was built during the reign of Aurangzeb, stands high. Around the town are numerous small excavations often full of stagnant water, and the largest of these is connected with the Chhoiyā Nālā, a tributary of the Kālī Nadī (East), which drains most of the town. The drainage system has been greatly improved of late years. The principal public offices are the *tahsīlī*, dispensary, and Anglo-vernacular school. The Church Missionary Society and the American Methodist Mission have branches here. Hāpur was constituted a municipality in 1872. During the ten years ending 1901 the income and expenditure averaged Rs. 17,000. In 1903-4 the income was Rs. 25,000, chiefly derived from octroi (Rs. 17,000), and the expenditure was Rs. 22,000. There is considerable local trade in sugar, grain, cotton, bamboos, and brass vessels. Two steam cotton-gins employ 263 hands. In 1904 there were eleven schools with 408 pupils.

Khekrā.—Town in the Bāghpat *tahsīl* of Meerut District, United Provinces, situated in 28° 52′ N. and 77° 17′ E., 26 miles west of Meerut city. Population (1901), 8,918. It is said to have been founded 1,600 years ago by Ahīrs, who were ousted by Jāts from Sikandarpur. In the Mutiny the owners rebelled, and the land was confiscated. The place is administered under Act XX of 1856, with an income of about Rs. 2,000. It is rising in importance as a centre of the grain and sugar trade. There is a primary school with 60 pupils.

Lāwar. — Town in the District and *tahsīl* of Meerut, United Provinces, situated in 29° 7′ N. and 77° 47′ E., 12 miles north of Meerut city. Population (1901), 5,046. It belongs to the descendants of Mīr Surkh, a native of Mazandarān, who acquired forty-five villages in the neighbourhood. It contains a fine house, called the Mahal Sarai, built about 1700 by Jawāhir Singh, who also excavated the Sūraj

Kund (tank) at Meerut. Lāwar is administered under Act XX of 1856, with an income of about Rs. 1,500. In 1904 the primary school had 80 pupils.

Mawānā Town.—Head-quarters of the *tahsīl* of the same name in Meerut District, United Provinces, situated in 29° 6′ N. and 77° 57′ E., 17 miles north-east of Meerut city. Population (1901), 9,207. The town, according to tradition, was founded by Mana, a huntsman employed by the Kauravas. It contains a large brick-built tank, and on the banks of another, now ruined, stands a fine temple built in the sixteenth century. The municipality was constituted in 1886. During the ten years ending 1901 the income and expenditure averaged Rs. 5,000. In 1903–4 the income was Rs. 7,000, chiefly from a tax on circumstances and property (Rs. 3,000), and the expenditure was Rs. 8,000. There is little trade, and most of the inhabitants are cultivators. The town contains two middle schools with 136 pupils, besides six primary schools with 164 pupils. The American Methodist Mission has a branch here.

Meerut City.—Administrative head-quarters of Meerut District, United Provinces, and military cantonment, situated in 29° 1′ N. and 77° 43′ E., 970 miles by rail from Calcutta and 931 miles by rail from Bombay. The city is the seventh largest in the United Provinces, and its population has risen considerably during the last thirty years. The numbers at the four enumerations were as follows: (1872) 81,386, (1881) 99,565, (1891) 119,390, and (1901) 118,129. The population in 1901 included 62,700 Hindus, 50,317 Muhammadans, and more than 4,000 Christians. Of the total, 78,740 persons reside in the municipality and 39,389 in cantonments.

The derivation of the name is uncertain. According to one account it is derived from an architect named Mahī, in the time of king Yudhishthira. The Jāts allege that it was founded by a colony of their caste belonging to the Mahārāshtra *gotra*. The Asoka pillar now standing on the ridge at Delhi was removed from Meerut, and remains of Buddhist buildings have been found near the Jāma Masjid. Meerut is said to have been captured early in the eleventh century by Saiyid Sālār Masūd; and about the same time Har Dat, Rājā of Baran (BULANDSHAHR), built a fort here, which was one of the most celebrated in Hindustān for its strength. The fort was captured by Kutb-ud-dīn in 1192, and all the Hindu temples were converted into mosques. In 1327 a Mongol chief, Tarmshirīn Khān, made an unsuccessful attempt on the city, but it was

completely sacked and destroyed by Tīmūr in 1399. Under Mughal rule the place revived and several fine buildings were erected. The brick fort is mentioned in the *Ain-i-Akbarī*, and Akbar struck copper coin at Meerut. The troubled times of the eighteenth century were unfavourable to the growth of towns in the Upper Doāb, and in 1805 it was described as 'a ruinous, depopulated town, and a place of no trade.' In 1806 cantonments were first established, and population grew rapidly to 29,014 in 1847 and 82,035 in 1853. Meerut obtained an unenviable notoriety in 1857 as the spot where the Mutiny broke out in Upper India. Disquieting rumours had been abroad for some time, and in April the troopers of the 3rd Cavalry refused to use the new cartridges. On May 9, eighty-five men were condemned to long terms of imprisonment; and the next afternoon, Sunday, May 10, a cry was raised that the Europeans were going to seize the magazines of the Native Infantry. The men of the 20th Native Infantry took up arms, and the Mutiny commenced. Several Europeans were shot down at once, and the bad characters of the city gathered together, armed with any weapons they could find. The convicted troopers were released from jail without the slightest opposition by the guards, and the rest of the prisoners broke out. The infuriated mob of sepoys, police, hangers-on about the bazars, servants, and convicts burned and plundered the cantonments, murdering every Christian they met. In the civil station, which lies some distance away, nothing was known of the outbreak until close on 7 p.m., when the people going to church saw the blaze of burning bungalows. Even the native troops posted there remained steady till relieved. The British troops cantoned near the civil lines included a regiment of cavalry, 800 infantry, and a large force of artillery; but nothing was done by the superior military authorities, and the general organization was defective. Many of the Carabineers could not ride, and there was a want of horses. Much time was wasted in a roll-call, and when the native lines were reached after dark, they were found deserted. No pursuit was attempted, and the mutineers were allowed to reach Delhi in safety. The town was, however, held throughout the disturbances, and was the base of a small volunteer force known as the Khākī Risālā, which helped materially in the restoration of order.

The native city lies south of the cantonments and east of the railway line. The streets are generally of mean appearance, and are badly arranged. The oldest monuments are a mauso-

leum and *dargāh* erected by Kutb-ud-dīn in 1194, the former in the city, and the latter about a mile away on the site of a famous temple to Nauchandī Debī. The Jāma Masjid is said to have been built in 1019 by Hasan Mahdī, Wazīr of Mahmūd of Ghazni, and was repaired by Humāyūn. A fine *dargāh* of red sandstone was erected by Nūr Jahān, wife of the emperor Jahāngīr, in 1628, in memory of a *fakīr* named Shāh Pīr; and there are some other seventeenth-century mosques and tombs. The great tank called the Sūraj Kund, or 'sun tank,' constructed in 1714, is surrounded by numerous small temples and *satī* pillars.

The town hall, containing the Lyall library, is an imposing building, the foundation-stone of which was laid in 1884 by the Duke of Connaught, then commanding the Meerut military district. In the cantonments the finest building is the church, which was built in 1821, and has a handsome spire. There are also a Roman Catholic church and a mission chapel, an asylum for the relief of distressed European and native Christians, and a club. The Mall is one of the finest station roads in India. Besides being the head-quarters of the ordinary District staff, Meerut is the residence of the Commissioner of the Division of the same name, Superintending Engineers of both the Roads and Buildings and Irrigation branches of the Public Works department, and two Executive Engineers in charge of divisions of the Upper Ganges Canal. The Church Missionary Society and the American Methodists have their principal stations here, besides several branches in the District.

Meerut was constituted a municipality in 1864. During the ten years ending 1901 the income and expenditure averaged about 2·3 lakhs; but the receipts include a loan of 7½ lakhs for water-supply in 1895, and the expenditure includes the cost of the works and an annual sum on account of capital and interest. In 1903–4 the total income was 2·2 lakhs, chiefly derived from octroi (1·4 lakhs) and municipal property, fines, &c. (Rs. 41,000). The expenditure of 2·5 lakhs included: general administration (Rs. 2,000), collection of taxes (Rs. 31,000), water-supply (Rs. 21,000), conservancy (Rs. 21,000), public safety (Rs. 15,000), and repayment of loans with interest (Rs. 65,000). A house tax has recently been sanctioned.

The water-works were completed in 1896. The supply is taken from the Upper Ganges Canal, 9 miles away, at a place called Bhola. The engines by which the supply is raised are worked by turbines turned by the water in the canal falls. In 1903–4 the daily consumption of water amounted to between

4 and 5 gallons per head. The drainage of the city is good, and all channels have been lined with masonry and the whole system recast within the last few years.

The normal garrison in the cantonments consists of four regiments of British and native cavalry and infantry, and two horse and two field batteries. The income of cantonment funds in 1903-4 was 1·4 lakhs, and the expenditure 1·2 lakhs. The chief taxes are octroi and a house tax.

The prosperity of the city was originally due to the presence of a large cantonment, and the population was in fact larger in 1853 than in 1872. The extension of the North-Western Railway in 1867 and 1869, however, laid the foundation of a more extended trade than the supply of local needs. In 1887 a bonded warehouse was opened about a mile from the city station, with which it is connected by a branch line, and 8 or 9 lakhs of maunds of grain, and nearly as much sugar, pass through this every year. Cotton cloth, building materials, oilseeds, spices, and *ghī* form the chief imports. Manufactures are not yet of much importance, but there are a large soap factory and a flour and oil mill. An important agricultural show is held annually near the Nauchandī temple, a mile from the city. The exhibits include 1,800 horses, besides cattle, agricultural products and implements, &c., and valuable prizes are given.

The chief educational institutions are the Meerut College and the normal school. The former was founded in 1892 at a cost of 2 lakhs raised by subscriptions, and receives an annual grant of Rs. 8,000 from Government. It had 123 pupils in 1903-4, of whom 15 were reading for a degree and 35 were in the First Arts classes. The oldest school belongs to the Church Missionary Society and has 120 pupils. There are eight other secondary schools with about 800 scholars, and four primary schools with 159 pupils, of whom over 100 are girls. Among the secondary schools may be mentioned that supported by the Arya Samāj, which is very strong here. The municipality spends about Rs. 10,000 annually on education.

Parīchhatgarh.—Town in the Mawānā *tahsīl* of Meerut District, United Provinces, situated in 28° 59′ N. and 77° 57′ E., 14 miles east of Meerut city. Population (1901), 6,278. The fort round which the town is built lays claim to great antiquity; tradition ascribes its construction to Parīkhshit, grandson of Arjuna, one of the five Pāndava brethren in the Mahābhārata, to whom is also attributed the foundation of the town. The

fort was restored by Rājā Nain Singh on the rise of Gūjar power in the eighteenth century. It was dismantled in 1857, and is now used as a police station. The town is administered under Act XX of 1856, with an income of about Rs. 1,700. The trade is local. There are branches of the Church Missionary Society and the American Methodist Mission, and two primary schools.

Phalauda.—Town in the Mawānā *tahsīl* of Meerut District, United Provinces, situated in 29° 11′ N. and 77° 51′ E., 17 miles north of Meerut city. Population (1901), 5,214. It is said to have been founded by a Tomar named Phalgu, whose descendants were dispossessed by Mīr Surkh, a Persian from Mazandarān. The town is a poor place, with narrow dirty streets, but has fine mango groves surrounding it. There is a *dargāh* of a saint called Kutb Shāh, where a religious fair is held annually, and the Church Missionary Society has a branch here. Phalauda is administered under Act XX of 1856, with an income of about Rs. 1,300. It contains a primary school with 75 pupils in 1904.

Pilkhuā.—Town in the Ghāziābād *tahsīl* of Meerut District, United Provinces, situated in 28° 43′ N. and 77° 40′ E., 19 miles south of Meerut city on the Oudh and Rohilkhand Railway, and on the metalled road from Delhi to Morādābād. Population (1901), 5,859. The town is badly drained and surrounded by stagnant pools, though a small drainage cut has been made. It contains branches of the Church Missionary Society and the American Methodist Mission. From 1872 to 1904 it was administered as a municipality, with an income and expenditure averaging about Rs. 3,000, but it has now been declared a 'notified area.' The chief manufacture is country cloth, which is specially noted for a peculiar pattern made by dyeing. There is also a considerable trade in leather and shoemaking, and the products are exported as far as Calcutta and Bombay. In 1904 there was an aided primary school with 35 pupils.

Sardhana Town.—Head-quarters of the *tahsīl* of the same name in Meerut District, United Provinces, situated in 29° 9′ N. and 77° 38′ E., on a metalled road 12 miles north-west of Meerut city and 6 miles from the Sardhana station on the North-Western Railway. The population rose from 12,059 in 1891 to 12,467 in 1891.

The place is now of small importance, but it was once famous as the residence of the Begam Sumrū. According to tradition, the town was founded by a Rājā Sarkat, whose family

ruled till their expulsion by the Musalmāns. The place became the property of Dhūsars and Bishnoīs, who were driven out by Tagās in the eighth century. Walter Reinhardt, better known by the sobriquet of Sombre or Sumrū, was a butcher by profession, and a native of Luxemburg. He came to India as a soldier in the French army, and deserting that service, took employment with the British, where he attained the rank of sergeant. Deserting again, he rejoined the French service at Chandernagore, and on the surrender of that settlement accompanied M. Law in his wanderings throughout India from 1757 to 1760. In the latter year Law's party joined the army of Shāh Alam in Bengal, and remained with the emperor until his defeat in 1760 near Gayā by Colonel Carnac. Sumrū next entered the service of Mīr Kāsim, by whom he was employed to murder the English prisoners at Patna (PATNA DISTRICT) in October, 1763. He succeeded in escaping into Oudh, and afterwards served several native chiefs, until in 1777 he entered the service of Mirza Najaf Khān, the general and minister of Shāh Alam II, and received the *pargana* of Sardhana in fief, as an assignment for the support of his battalions. He died here in the following year, and was succeeded by his widow, the Begam Sumrū, who continued to maintain the military force. This remarkable woman, the illegitimate daughter of a Musalmān of Arab descent, and the mistress of Reinhardt before becoming his wife, assumed the entire management of the estate, and the personal command of the troops, which numbered five battalions of sepoys, about 300 European officers and gunners, with 50 pieces of cannon, and a body of irregular horse.

In 1781 the Begam was baptized into the Roman Catholic Church, under the name of Johanna. Her troops rendered excellent service to the Delhi emperor in the battle of Gokulgarh in 1788, where a charge of Sardhana troops, personally led by the Begam and the celebrated adventurer George Thomas, saved the fortunes of the day at a critical moment. In 1792 the Begam married Levassoult, a Frenchman in command of her artillery. In 1795 her European officers became disaffected, and an illegitimate son of Reinhardt, known as Zafaryāb Khān, put himself at their head. The Begam and her husband were forced to fly. In the flight the Begam's palanquin was overtaken by the rebels, and she stabbed herself to prevent falling alive into their hands; whereupon Levassoult shot himself, in pursuance of a vow that if one of them was killed the other would commit suicide. The

Begam's wound, however, was but a slight one, and she was brought back to Sardhana. Another account is that the Begam had become tired of her husband, and that her self-inflicted wound was only a device to get rid of him. However, all her power passed temporarily into the hands of Zafaryāb Khān, and she was treated with great personal indignity, till she was restored to power some months later by George Thomas. Henceforth the Begam remained in undisturbed possession of her estates till her death in 1836.

After the battle of Delhi, and the British conquest of the Upper Doāb in 1803, the Begam submitted to the new rulers, and ever after remained distinguished for her loyalty. Her possessions were numerous, and included several considerable towns, such as Sardhana, Baraut, Barnāwa, and Dankaur, lying in the immediate neighbourhood of great marts like Meerut, Delhi, Khurja, and Bāghpat. Her income from her estates in Meerut District alone amounted to £56,721 per annum. She kept up a considerable army, and had places of residence at Khirwa-Jalālpur, Meerut, and Delhi, besides her palace at Sardhana. She endowed with large sums the Catholic Churches of Madras, Calcutta, Agra, and Bombay, the Sardhana Cathedral, the Sardhana poorhouse, St. John's Roman Catholic College, where natives are trained for the priesthood, and the Meerut Catholic Chapel. She also made over a lakh of rupees to the Bishop of Calcutta for charitable purposes, and subscribed liberally to Hindu and Musalmān institutions.

Zafaryāb Khān, the son of Sumrū, died in 1802, and left one daughter, whom the Begam married to Mr. Dyce, an officer in her service. David Ouchterlony Dyce Sombre, the issue of this marriage, died in Paris, July, 1851, and the Sardhana estates passed to his widow, the Hon. Mary Ann Forester, daughter of Viscount St. Vincent. The palace and adjoining property have since been purchased by the Roman Catholic Mission, and the former is used as an orphanage.

The town itself lies low, and has a poor and decayed appearance. Immediately to the north is a wide parade-ground, beyond which is the quarter called Lashkarganj, founded by the Begam as a cantonment for her troops, and the old fort now in ruins. East of the town lies the Begam's palace, a fine house with a magnificent flight of steps at the entrance and extensive grounds. It formerly contained a valuable collection of paintings, but these have been sold; some of them are now in the Indian Museum, and others in Government House,

Allahābād. The Roman Catholic Cathedral is an imposing building. The public offices include the *tahsīlī*, post office, and police station. In addition to the Roman Catholic Mission, the American Methodists have a branch here.

Sardhana was constituted a municipality in 1883. The income and expenditure during the ten years ending 1901 averaged Rs. 11,000. In 1903-4 the income was Rs. 15,000, chiefly from octroi (Rs. 10,500), and the expenditure was Rs. 13,000. The trade is entirely local, except for the export of grain. The town contains a middle school with 183 pupils, and six primary schools with 280 pupils.

[H. G. Keene, *Calcutta Review*, January and April, 1880.]

Shāhdara.—Town in the Ghāziābād *tahsīl* of Meerut District, United Provinces, situated in 28° 40′ N. and 77° 18′ E., on the East Indian Railway, 5 miles from Delhi. A light railway to Sahāranpur is being constructed. Population (1901), 5,540. It was founded by Shāh Jahān as a market, and was sacked in the eighteenth century by Sūraj Mal, the Jāt Rājā of Bharatpur, and plundered by the soldiers of Ahmad Shāh Durrāni just before the battle of Pānīpat. It is badly drained, and drinking-water is obtained from a distance. The American Methodist and Reformed Presbyterian Missions have branches here. From 1872 to 1904 Shāhdara was administered as a municipality, with an income and expenditure averaging about Rs. 3,000. It is now a 'notified area.' The trade of the place has fallen away, and it is chiefly celebrated for sweetmeats; but there is still a small manufacture of shoes and leather, and a little sugar-refining. In 1904 there was a primary school with 75 pupils.

Bulandshahr District.—District in the Meerut Division, United Provinces, lying between 28° 4′ and 28° 43′ N. and 77° 18′ and 78° 28′ E., with an area of 1,899 square miles. It is situated in the DOĀB or alluvial plain between the Ganges and Jumna, which form its eastern and western boundaries, dividing it from Morādābād and Budaun Districts, and from the Punjab Districts of Delhi and Gurgaon, respectively. On the north and south lie Meerut and Alīgarh Districts. The central portion forms an elevated plain, flanked by strips of low-lying land, called *khādar*, on the banks of the two great rivers. The Jumna *khādar* is an inferior tract, from 5 to 10 miles wide, except in the south, where the river flows close to its eastern high bank. The swampy nature of the soil is increased in the north by the two rivers, HINDAN and Bhuriyā, but flooding from the Jumna has been prevented

Boundaries, configuration, and river system.

by the embankments protecting the head-works of the AGRA CANAL. The Ganges *khādar* is narrower, and in one or two places the river leaves fertile deposits which are regularly cultivated. Through the centre of the upland flows the KĀLĪ NADĪ (EAST), in a narrow and well-defined valley which suffers from flooding in wet years. The western half contains a sandy ridge, now marked by the Māt branch of the Upper Ganges Canal, and two drainage lines known as the Patwai and Karon or Karwan. The eastern portion is drained by another channel called the Chhoiyā. The whole of this tract is a fertile stretch of country, which owes much to the extension of canal-irrigation.

Geology. The soil is entirely alluvium in which *kankar* is the only stone found, while the surface occasionally bears saline efflorescences.

Botany. The flora of the District presents no peculiarities. At one time thick jungle covered with *dhak* (*Butea frondosa*) was common; but the country was denuded of wood for fuel when the East Indian Railway was first opened, and trees have not been replanted. The commonest and most useful trees are the *babūl* and *kīkar* (*Acacia arabica* and *A. eburnia*). The *shīsham* (*Dalbergia Sissoo*), *nīm* (*Melia Azadirachta*), and *pīpal* (*Ficus religiosa*) are also common. In the east the landlords have encouraged the plantation of fine mango groves.

Fauna. Wild hog and hog deer are common in the *khādar*. Both antelope and *nīlgai* are found in the uplands, but are decreasing owing to the spread of cultivation. The leopard, wolf, and hyena are occasionally met with. In the cold season duck and snipe collect in large numbers on the ponds and marshes. Fish are not much consumed in the District, though plentiful in the rivers.

Climate and temperature. The climate resembles that of MEERUT DISTRICT, but no meteorological observations are made here, except a record of rainfall. The extension of canal-irrigation has increased malaria, but its effects have been mitigated by the improvement of the drainage system.

Rainfall. The annual rainfall averages about 26 inches, of which 24 inches are usually measured between June 1 and the end of October. Large variations occur in different years, the fall varying from under 15 inches to over 40 inches. There is not much difference between the amounts in different parts of the District, but the eastern half receives slightly more than the western.

History. The early traditions of the people assert that the modern

District of Bulandshahr formed a portion of the Pāndava kingdom of Hastināpur, and that after that city had been cut away by the Ganges the tract was administered by a governor who resided at the ancient town of AHĀR. Whatever credence may be placed in these myths, we know from the evidence of an inscription that the District was inhabited by Gaur Brāhmans and ruled over by the Gupta dynasty in the fifth century of our era. Few glimpses of light have been cast upon the annals of this region before the advent of the Muhammadans, with whose approach detailed history begins for the whole of Northern India. In 1018, when Mahmūd of Ghazni arrived at Baran (as the town of Bulandshahr is sometimes called to the present day), he found it in possession of a native prince named Har Dat. The presence of so doughty an apostle as Mahmūd naturally affected the Hindu ruler; and accordingly the Rājā himself and 10,000 followers came forth, says the Musalmān historian, 'and proclaimed their anxiety for conversion and their rejection of idols.' This timely repentance saved their lives and property for the time; but Mahmūd's raid was the occasion for a great immigration towards the Doāb of fresh tribes who still hold a place in the District. In 1193 Kutb-ud-dīn appeared before Baran, which was for some time strenuously defended by the Dor Rājā, Chandra Sen; but through the treachery of his kinsman, Jaipāl, it was at last captured by the Musalmāns. The traitorous Hindu accepted the faith of Islām and the Chaudhrīship of Baran, where his descendants still reside, and own some small landed property. The fourteenth century is marked as an epoch when many of the present tribes inhabiting Bulandshahr first gained a footing in the region. Numerous Rājput adventurers poured into the defenceless country and expelled the Meos from their lands and villages. This was also the period of the early Mongol invasions; so that the condition of the Doāb was one of extreme wretchedness, caused by the combined ravages of pestilence, war, and famine, with the usual concomitant of internal anarchy. The firm establishment of the Mughal dynasty gave a long respite of tranquillity and comparatively settled government to these harassed provinces. They shared in the administrative reconstruction of Akbar; their annals are devoid of incident during the flourishing reigns of his great successors. Here, as in so many other Districts, the proselytizing zeal of Aurangzeb has left permanent effects in the large number of Musalmān converts; but Bulandshahr was too near the court to afford much opportunity for those rebellions and

royal conquests which make up the chief elements of Mughal history. During the disastrous decline of the imperial power, which dates from the accession of Bahādur Shāh in 1707, the country round Baran was a prey to the same misfortunes which overtook all the more fertile provinces of the empire. The Gūjars and Jāts, always to the front upon every occasion of disturbance, exhibited their usual turbulent spirit; and many of their chieftains carved out principalities from the villages of their neighbours. But as Baran was at this time a dependency of Koil, it has no proper history of its own during the eighteenth century, apart from that of ALĪGARH DISTRICT. Under the Marāthā rule it continued to be administered from Koil; and when that town with the adjoining fort of Alīgarh was captured by the British in 1803, Bulandshahr and the surrounding country were incorporated in the newly formed District.

The Mutiny of 1857 was ushered in at Bulandshahr by the revolt of the 9th Native Infantry, which took place on May 21, shortly after the outbreak at Alīgarh. The officers were compelled to fly to Meerut, and Bulandshahr was plundered by a band of rebellious Gūjars. Its recovery was a matter of great importance, as it lies on the main road from Agra and Alīgarh to Meerut. Accordingly, a small body of volunteers was dispatched from Meerut for the purpose of retaking the town, which they were enabled to do by the aid of the Dehra Gurkhas. Shortly afterwards, however, the Gurkhas marched off to join General Wilson's column, and the Gūjars once more rose. Walīdād Khān of Mālāgarh put himself at the head of the movement, which proved strong enough to drive the small European garrison out of the District. From the beginning of July till the end of September Walīdād held Bulandshahr without opposition, and commanded the whole line of communication with Agra. Meantime internal feuds went on as briskly as in other revolted Districts, the old proprietors often ousting by force the possessors of their former estates. But on September 25 Colonel Greathed's flying column set out from Ghāziābād for Bulandshahr, whence Walīdād was expelled after a sharp engagement and forced to fly across the Ganges. On October 4 the District was regularly occupied by Colonel Farquhar, and order was rapidly restored. The police were at once reorganized, while measures of repression were adopted against the refractory Gūjars, many of whom still continued under arms. It was necessary to march against rebels in Etah early in 1858; but the tranquillity

of Bulandshahr itself was not again disturbed. Throughout the progress of the Mutiny, the Jāts almost all took the side of Government, while the Gūjars and Musalmān Rājputs proved our most irreconcilable enemies.

Archaeology. Two important copperplate inscriptions have been found in the District, one dated A. D. 465–6 of Skanda Gupta, and another giving the lineage of the Dor Rājās. There are also ancient remains at Ahār and Bulandshahr. A *dargāh* was built at Bulandshahr in 1193, when the last Dor Rājā was defeated by the Muhammadans; and the town contains other buildings of the Muhammadan period.

The people. The number of towns and villages in the District is 1,532. Population has increased considerably. The numbers at the four enumerations were as follows: (1872) 937,427, (1881) 924,822, (1891) 949,914, and (1901) 1,138,101. The temporary decline between 1872 and 1881 was due to the terrible outbreak of fever in 1879, which decimated the people. The increase of nearly 20 per cent. during the last decade was exceeded in only one District in the Provinces. There are four *tahsīls*—ANŪPSHAHR, BULANDSHAHR, SIKANDARĀBĀD, and KHURJA—the head-quarters of each being at a town of the same name. These four towns are also municipalities, and the last three are the chief places in the District.

The principal statistics in 1901 are given below:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Anūpshahr	444	4	378	278,152	626	+ 22.0	6,325
Bulandshahr	477	5	379	332,262	696	+ 17.8	9,612
Sikandarābād	516	7	404	260,849	505	+ 16.2	5,046
Khurja	462	7	348	266,838	577	+ 20.7	7,176
District total	1,899	23	1,509	1,138,101	599	+ 19.8	28,159

In 1901 Hindus numbered 900,169, or 79 per cent. of the total; Musalmāns, 217,209, or 19 per cent.; Aryas, 12,298; and Christians, 4,528. The number of Aryas is greater than in any other District in the Provinces, and the Samāj has twenty-seven lodges or branches in this District. Practically all the inhabitants speak Western Hindī. In the north the dialect is Hindustāni, while in the south Braj is commonly used.

Castes and occupations. Among Hindus the most numerous castes are Chamārs (leather-workers and labourers), 183,000, who form one-fifth of

the total; Brāhmans, 113,000; Rājputs, 93,000; Jāts, 69,000; Lodhas (cultivators), 64,000; Baniās, 56,000; and Gūjars, 44,000. The Brāhmans chiefly belong to the Gaur clan, which is peculiar to the west of the Provinces and the Punjab, while Jāts and Gūjars also are chiefly found in the same area. The Lodhas, on the other hand, inhabit the central Districts of the Provinces. The Meos or Mīnās and Mewātīs are immigrants from Mewāt; and among other castes peculiar to this and a few other Districts may be mentioned the Orhs (weavers), 4,000, and Aheriās (hunters), 4,000. The Musalmāns of nominally foreign extraction are less numerous than those descended from Hindu converts. Shaikhs number 24,000; Pathāns, 17,000; Saiyids, 6,000; and Mughals only 3,000; while Musalmān Rājputs number 34,000; Barhais (carpenters), 15,000; Telis (oil-pressers), 11,000; and Lohārs (blacksmiths), 11,000. About 51 per cent. of the population are supported by agriculture. Rājputs, both Musalmān and Hindu, Jāts, Saiyids, and Baniās are the largest landholders; and Rājputs, Brāhmans, and Jāts the principal cultivators. General labour supports 11 per cent. of the total population, personal service 9 per cent., weaving 3 per cent., and grain-dealing 3 per cent.

Christian missions.

Of the 4,480 native Christians in 1901, 4,257 belonged to the American Methodist Episcopal Church, which started work here in 1887. Most of them are recent converts, chiefly from the lower castes. The Zanāna Bible and Medical Mission and the Church Missionary Society have a few stations in the District.

General agricultural conditions.

Excluding the Jumna and Ganges *khādars*, the chief agricultural defect is the presence of barren *ūsar* land covered with saline efflorescences called *reh*, which occurs in badly-drained localities, and spreads in wet years. The District is remarkable for the absence of grazing-grounds, fodder-crops being largely grown. Where conditions are so uniform, the chief variations are due to the methods employed by different castes, among whom Ahīrs and Jāts take the first place. The Ahīrs devote most attention to the area near the village site and prefer well-irrigation, while the Jāts do equal justice to all good land and use canal water judiciously. The Lodhas come next and are as industrious as the Jāts, but lack their physique. Gūjars are usually inferior.

Chief agricultural statistics

The tenures are those common to the United Provinces; but the District is marked by the number of large estates. Out of 3,440 *mahāls* at the last settlement, 2,446 were *zamīndāri*

or joint *zamīndāri*, 546 *bhaiyāchārā*, and 448 *pattīdāri* or imperfect *pattīdāri*. The main statistics of cultivation in 1903-4 are shown below, in square miles:— and principal crops.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Anūpshahr . .	444	339	158	38
Bulandshahr . .	477	376	191	46
Sikandarābād . .	516	358	150	85
Khurja . . .	462	345	152	72
Total	1,899	1,418	651	241

The chief food-crops and the area occupied by each in square miles were: wheat (424), gram (199), maize (188), barley (227), *jowār* (156), and *bājra* (121). The area under maize has trebled during the last twenty-five years. *Bājra* is chiefly grown on inferior soil in the Sikandarābād and Khurja *tahsīls*. The other important crops are cotton (103) and sugar-cane (63), both of which are rapidly increasing in importance. On the other hand, the area under indigo has declined from 120 square miles in 1885 to 25 in 1903-4.

Improvements in agricultural practice.

From 1870 to 1874 a model farm was maintained at Bulandshahr, and attempts were made to introduce Egyptian cotton; but these were not successful. The chief improvements effected have been the extension of canal-irrigation, and its correction by means of drainage cuts. Much has also been done to straighten and deepen the channels of the rivers described above, especially the East Kālī Nadī. These have led to the extended cultivation of the more valuable staples. Very few advances have been made under the Agriculturists' Loans Act, and between 1891 and 1900 only Rs. 30,000 was given under the Land Improvement Loans Act. In 1903-4 the loans were Rs. 1,700. The agricultural show held annually at Bulandshahr has done much to stimulate interest in small improvements.

Cattle, horses, and sheep.

An attempt was made in 1865 to improve the cattle by importing bulls from Hariāna; but the *zamīndārs* were not favourable. The ordinary cattle are poor, and the best animals are imported from Rājputāna, Mewār, or Bijnor. Horse-breeding has, however, become an important pursuit, and there are twenty stallions owned by Government in this District. The *zamīndārs* of all classes are anxious to obtain their services, and strong handsome colts and fillies are to be seen in many parts. Mules are also bred, and ten donkey stallions

have been supplied. Since 1903 horse and mule-breeding operations have been controlled by the Army Remount department. Sheep and goats are kept in large numbers, but are of the ordinary inferior type.

Irrigation. The District is exceptionally well provided with means of irrigation. The main channel of the Upper Ganges Canal passes through the centre from north to south. Near the eastern border irrigation is supplied by the Anūpshahr branch of the same canal, while the western half is watered by the Māt branch. The LOWER GANGES CANAL has its head-works in this District, leaving the right bank of the Ganges at the village of Naraura. Most of the wells in use are masonry, and water is raised almost universally in leathern buckets worked by bullocks. In 1903-4 canals irrigated 323 square miles and wells 310. Other sources are insignificant.

Minerals. Salt was formerly manufactured largely in the Jumna *khādar*, but none is made now. The extraction of sodium sulphate has also been forbidden. There are sixty factories where crude saltpetre is produced, and one refinery. Where *kankar* occurs in compact masses, it is quarried in blocks and used for building purposes.

Arts and manufactures. Till recently Bulandshahr was one of the most important indigo-producing Districts in the United Provinces. There were more than 120 factories in 1891; but the trade has fallen off considerably, and in 1902 there were only 47, which employed about 3,800 hands. Cotton is ginned and pressed at 12 factories, which employ more than 900 hands; and this industry is increasing. The owners of the factories have imported the latest machinery from England. Other manufactures are not of great importance; but the calico-printing of JAHĀNGĪRĀBĀD, the muslins of SIKANDARĀBĀD, the pottery of KHURJA, the rugs of JEWAR, and the wood-carving of BULANDSHAHR and SHIKĀRPUR deserve mention for their artistic merits. There is also a flourishing glass industry in the Bulandshahr *tahsīl*, where bangles and small phials and bottles are largely made. Country cloth is woven as a hand industry in many places.

Commerce. Grain and cotton form the principal exports; the weight of cleaned cotton exported is nearly 4,000 tons, having doubled in the last twenty-five years. The imports include piece-goods, metals, and salt. Anūpshahr is a dépôt for the import of timber and bamboos rafted down the Ganges; but Khurja and Dibai have become the largest commercial centres, owing to their proximity to the railway. Local trade is carried

on at numerous small towns, where markets are held once or twice a week.

Railways and roads. The East Indian Railway runs from south to north through the western half of the District. For strategic reasons it was built on the shortest possible alignment, and thus passes some distance from the principal towns; but a branch line is under construction, which will connect Khurja and Bulandshahr and join the Oudh and Rohilkhand Railway at HĀPUR in Meerut District. A branch of the Oudh and Rohilkhand Railway from Alīgarh to Morādābād and Bareilly crosses the south-east corner.

There are 163 miles of metalled roads and 495 miles of unmetalled roads. The whole length of metalled roads is in charge of the Public Works department, but the cost of 109 miles of these, and the whole cost of the unmetalled roads, is met from Local funds. Avenues of trees are maintained on 257 miles. The principal line is that of the grand trunk road from Calcutta to Delhi, branches of which leave Bulandshahr for Meerut and Anūpshahr. The only parts where communications are defective are the northern Jumna *khādar* and the north-eastern and south-eastern corners of the District.

Famine. Bulandshahr shared in the many famines which devastated the Upper Doāb before British rule, and during the early years of the nineteenth century scarcity occurred several times. In 1837 famine was severe, and its effects were increased by immigration from Hariāna and Mārwār, and the Districts of Etāwah and Mainpurī. The worst-affected tracts were the areas along the Jumna; but the construction of the grand trunk road provided employment for many, and other works were opened. In 1860 the same tracts suffered, being largely inhabited by Gūjars, still impoverished owing to their lawlessness in the Mutiny. The Māt branch canal was started as a relief work. About Rs. 32,000 was spent on relief and Rs. 50,000 advanced for purchase of bullocks and seed, much of which was repaid later, and spent in constructing dispensaries. In 1868–9, though the rains failed, there was a large stock of grain, and the spread of irrigation enabled spring crops to be sown. In 1877 and 1896–7 no distress was felt except among immigrants, and able-bodied labourers could always find work. In the latter period alone 1,518 wells were made, and the high prices of grain were a source of profit.

District The ordinary staff consists of a Collector, assisted by one

Subdivisions and staff.

member of the Indian Civil Service and three Deputy-Collectors recruited in India. There is a *tahsīldār* at the head-quarters of each of the four *tahsīls*. Bulandshahr is also the head-quarters of an Executive Engineer of the Upper Ganges Canal.

Civil justice and crime.

For purposes of civil jurisdiction the District is divided between two Judgeships. The Sikandarābād *tahsīl* belongs to the *munsifī* of Ghāziābād in Meerut District, and appellate work is disposed of by the Judge of Meerut. The rest of the District is divided into two *munsifīs*, with head-quarters at Bulandshahr and Khurja, subordinate to the Judge of Alīgarh. The additional Sessions Judge of Alīgarh exercises criminal jurisdiction over Bulandshahr. The District has a bad reputation for crime, cattle-theft being especially common. Murders, robberies, and dacoities are also numerous. The Gūjars are largely responsible for this lawlessness, being notorious for cattle-lifting.

Land revenue administration.

Part of the District was acquired by cession from the Nawāb Wazīr of Oudh in 1801, and part was conquered from the Marāthās in 1803. For twenty years the area now included lay partly in Alīgarh, and partly in Meerut or South Sahāranpur Districts. In 1819, owing to the lawlessness of the Gūjars, a Joint Magistrate was stationed at Bulandshahr, and in 1823 a separate District was formed. The early land revenue settlements were of a summary nature, each lasting one, three, four, or five years. *Talukdārs*, who were found in possession of large tracts, were gradually set aside. Operations under Regulation VII of 1822 were completed in only about 600 villages, and the first regular settlement was made between 1834 and 1837. The next settlement was commenced before the Mutiny, and was completed in 1865; but the project for a permanent settlement entailed a complete revision. This showed that there had been an extraordinary rise in rental 'assets,' which was partly due to survey errors, partly to concealments at the time of settlement, and partly to an increase in the rental value of land. The idea of permanently fixing the revenue was abandoned, and the demand originally proposed was sanctioned, with a few alterations, yielding 12·4 lakhs. The 'assets,' of which the revenue formed half, were calculated by fixing standard rent rates for different classes of soil. These rates were derived partly from average rents and partly from valuations of produce. The latest revision of settlement was completed between 1886 and 1889, and was notorious for its results. The assessment was to be made on the actual

rental 'assets'; but the records were found to be unreliable on account of the dishonesty of many landlords, who had deliberately falsified the *patwāris'* papers, thrown land out of cultivation, and stopped irrigation. The tenants, who had been treated harshly and not allowed to acquire occupancy rights, themselves came forward to expose the fraud. Large numbers of rent-rolls were entirely rejected, and the villages they related to were valued at circle rates. The circle rates were obtained by an analysis of rents believed to be genuine. While the settlement of most of the District was confirmed for thirty years, a number of villages were settled for shorter terms to enable the settlement to be made on the basis of a fair area of cultivation. The total demand was fixed at 19·8 lakhs, which has since risen to 20 lakhs. The incidence per acre is Rs. 1-15-0, varying in different parts of the District from Rs. 1-2-0 to Rs. 2-9-0.

Collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue .	12,31	18,40	19,81	19,85
Total revenue .	13,81	24,66	27,99	28,02

Local self-government.

There are four municipalities—BULANDSHAHR, ANŪPSHAHR, SIKANDARĀBĀD, and KHURJA—and 19 towns are administered under Act XX of 1856. Outside these, local affairs are managed by the District board. In 1903-4 the income of the latter was 1·9 lakhs, chiefly derived from local rates. The expenditure was 2 lakhs, of which Rs. 96,000 was spent on roads and buildings.

Police and jails.

In 1903 the District Superintendent of police was assisted by four inspectors. The force numbered 106 officers and 355 constables, besides 369 municipal and town police, and 1,979 village and road police. The District jail contained an average of 232 prisoners in the same year.

Education.

The District is backward in literacy, and only 2·5 per cent. (4·5 males and 0·3 females) of the population could read and write in 1901. In 1881 there were 130 public schools with 4,486 pupils, and the numbers rose in 1901 to 171 schools with 7,989 pupils. In 1903-4 there were 187 public schools with 10,801 pupils, of whom 57 were girls, and also 271 private schools with 4,157 pupils. The total expenditure on education was Rs. 49,000, of which Local and municipal funds supplied Rs. 38,000, and fees Rs. 11,000. Of

the public schools, two were managed by Government and 117 by the District and municipal boards.

Hospitals and dispensaries. The District has nine hospitals and dispensaries, with accommodation for 109 in-patients. In 1903 the number of cases treated was 101,000, of whom 2,300 were in-patients, and 8,400 operations were performed. The expenditure in the same year was Rs. 18,000, chiefly from Local funds.

Vaccination. In 1903-4, 39,000 persons were successfully vaccinated, representing a proportion of 34 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[F. S. Growse, *Bulandshahr* (Benares, 1884); T. Stoker, *Settlement Report* (1891); H. R. Nevill, *District Gazetteer* (1903).]

Anūpshahr Tahsīl.—Eastern *tahsīl* of Bulandshahr District, United Provinces, comprising the *parganas* of Anūpshahr, Ahār, and Dibai, and lying along the Ganges, between 28° 5′ and 28° 37′ N. and 77° 58′ and 78° 28′ E., with an area of 444 square miles. The population rose from 222,481 in 1891 to 278,152 in 1901. There are 378 villages and four towns, the largest of which are JAHĀNGĪRĀBĀD (population, 11,572), DIBAI (10,579), and ANŪPSHAHR (8,601), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 4,99,000, and for cesses Rs. 80,000. The *tahsīl* is divided into two parts, from north to south, by the Chhoiyā river. The land to the east is naturally inferior to that on the west of the river, but has been immensely improved by irrigation from the Anūpshahr branch of the Upper Ganges Canal. The channel of the Chhoiyā was very badly defined, but has been straightened and deepened by the Irrigation department. In 1903-4 the area under cultivation was 339 square miles, of which 158 were irrigated, wells supplying more than half.

Bulandshahr Tahsīl.—Central *tahsīl* of Bulandshahr District, United Provinces, comprising the *parganas* of Baran, Agautā, Siyānā, and Shikārpur, and lying between 28° 14′ and 28° 43′ N. and 77° 43′ and 78° 13′ E., with an area of 477 square miles. The population rose from 281,928 in 1891 to 332,262 in 1901. There are 379 villages and five towns, the largest of which are BULANDSHAHR (population, 18,959), the District and *tahsīl* head-quarters, SHIKĀRPUR (12,249), SIYĀNĀ (7,615), GULAOTHĪ (7,208), and AURANGĀBĀD (5,916). The demand for land revenue in 1903-4 was Rs. 5,65,000, and for cesses Rs. 94,000. This is the richest *tahsīl* in the District, and the density of population, 696 persons per square mile, is considerably above the District average (599). The East

Kālī Nadī flows from north to south through the western portion of the *tahsīl*, and formerly caused much damage by flooding in wet years. It has been straightened and deepened, and is no longer used as a canal escape, with very beneficial results. The northern *pargana* of Agautā is the most fertile. There are marshy tracts in the north-east of the *tahsīl*, and sandy areas in the south-east. Irrigation is supplied by the Upper Ganges Canal east of the Kālī Nadī. In 1903–4 the area under cultivation was 376 square miles, of which 191 were irrigated. Well-irrigation supplies two-thirds of this area, and is more important here than in the other *tahsīls* of the District.

Sikandarābād Tahsīl.—North-western *tahsīl* of Bulandshahr District, United Provinces, comprising the *parganas* of Sikandarābād, Dādrī, and Dankaur, and lying along the Jumna, between 28° 15′ and 28° 39′ N. and 77° 18′ and 77° 50′ E., with an area of 516 square miles. The population rose from 224,368 in 1891 to 260,849 in 1901. There are 404 villages and seven towns, the largest of which are SIKANDARĀBĀD (population, 18,290), the *tahsīl* head-quarters, and DANKAUR (5,444). The demand for land revenue in 1903–4 was Rs. 4,32,000, and for cesses Rs. 74,000. The *tahsīl* is the poorest in the District, and supports only 505 persons per square mile, against an average of 599. It is crossed from north to south by two main lines of drainage—the Patwai and the Karon or Karwan. Both of these are naturally ill-defined, but their channels have been deepened and straightened. The area between the Patwai and Jumna is poor, being largely covered with tamarisk and grass jungle varied by patches of salt waste. In the north the HINDAN and Bhuriyā rivers increase the saturation, though they bring down fertile deposits of earth. The *tahsīl* is well supplied with irrigation by the Māt branch of the Upper Ganges Canal, which passes through the centre from north to south. In 1903–4 the area under cultivation was 358 square miles, of which 150 were irrigated. More than two-thirds of the irrigated area is supplied from the canal.

Khurja Tahsīl.—Southern *tahsīl* of Bulandshahr District, United Provinces, comprising the *parganas* of Jewar, Khurja, and Pahāsū, and lying between 28° 4′ and 28° 20′ N. and 77° 29′ and 78° 12′ E., with an area of 462 square miles. The population rose from 221,137 in 1891 to 266,838 in 1901. There are 348 villages and seven towns, the largest of which are KHURJA (population, 29,277), the *tahsīl* head-quarters, JEWAR (7,718), PAHĀSŪ (5,603), CHHATĀRĪ (5,574), and RABŪPURA (5,048). The demand for land revenue in 1903–4 was Rs. 5,05,000,

and for cesses Rs. 82,000. The *tahsīl* is drained by the East Kālī Nadī, the Karon or Karwan, and the Patwai or Patwāhā Bahū, all which have been deepened and straightened to improve the drainage. The Jumna flows along the western border. East of the Kālī Nadī and west of the Patwai are tracts of light sandy soil; but the central portion is highly fertile, and is well supplied by irrigation from the Upper Ganges Canal and the Māt branch of the same work. Cotton is more largely grown in this tract than in any other part of the District. In 1903–4 the area under cultivation was 345 square miles, of which 152 were irrigated. Well-irrigation supplies about one-third of the total, and is chiefly important in the area between the canals.

Ahār.—Town in the Anūpshahr *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 28′ N. and 78° 15′ E., 21 miles east of Bulandshahr town. Population (1901), 2,382. It is said to derive its name from *ahi*, 'snake,' and *hār*, 'sacrifice,' as tradition relates that Janamejayā performed his great snake sacrifice here. The capital of the Lunar race is also said to have been moved here after Hastināpur was washed away. Another legend states that this was the residence of Rukminī, wife of Krishna, and the temple from which she was carried off is still pointed out. The place is certainly of great antiquity, and several fragments of stone sculpture of an early date have been found. Under Akbar, Ahār was the chief town of a *mahāl* or *pargana*. The town lies on the high bank of the Ganges, and there are many temples. It also contains a hall for the meetings of the Arya Samāj, which has over 100 followers here.

Anūpshahr Town.—Head-quarters of the *tahsīl* of the same name, in Bulandshahr District, United Provinces, situated in 28° 21′ N. and 78° 16′ E., 25 miles east of Bulandshahr town on a metalled road. Population (1901), 8,601. It was founded in the reign of Jahāngīr by the Bargūjar Rājā Anūp Rai, from whom it derives its name, and was of great importance in the eighteenth century as commanding an important crossing of the Ganges on the road from Delhi to Rohilkhand. In 1757 Ahmad Shāh Durrāni established cantonments here for a time, and returned to them in 1759. It was from this place that the coalition was organized which led to the overthrow of the Marāthās at Pānīpat in 1761. In 1773 the combined forces of the Oudh Wazīr and the British made Anūpshahr their rendezvous when opposing the Marāthā invasion of Rohilkhand; and from that date

till 1806 Anūpshahr was garrisoned by British troops, afterwards removed to Meerut. During the Mutiny the Jāts successfully defended the crossing of the river by the rebels from Rohilkhand. The town stands on the high bank of the Ganges and is well drained. There is a fine bazar, and besides the *tahsīlī* a dispensary is maintained. The Zanāna Bible and Medical Mission and the Church Missionary Society have branches here. Anūpshahr has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 9,000. In 1903-4 the income was Rs. 11,000, chiefly derived from octroi (Rs. 6,000), and the expenditure was Rs. 15,000. The town was formerly the northern limit of traffic on the Ganges, and a factory of the East India Company was maintained here for some time; but the construction of the Naraura weir in 1878 cut it off from the lower reaches of the river, and at present it is merely a dépôt for timber and bamboos. The through trade across the river has also been diverted by railways, and at present sugar is the chief article of commerce. There is a small manufacture of cloth, blankets, and shoes for the local demand. The *tahsīlī* school contains 160 pupils, and there is also a Mission Anglo-vernacular school.

Aurangābād Saiyid.—Town in Bulandshahr District, United Provinces, situated in 28° 22′ N. and 78° 5′ E., 9 miles north-east of Bulandshahr town. Population (1901), 5,916. It was founded in 1704 by Saiyid Abdul Azīz, who undertook, with the permission of the emperor Aurangzeb, to eject the turbulent Jaroliyās of the neighbourhood. His descendants still own the town. The site is low and surrounded by water during the rains. Aurangābād is administered under Act XX of 1856, with an income of Rs. 2,000. Trade is entirely local. There is a primary school with 50 pupils.

Bulandshahr Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 15′ N. and 77° 52′ E., on the grand trunk road, 10 miles east of the Chola station on the East Indian Railway. Population (1901), 18,959, of whom 9,139 are Hindus and 9,071 Musalmāns. The old name of the town was Baran, and it received the nickname Unchānagar or Bulandshahr ('high town') from its elevated position on a bank near the Kālī Nadī. It is a place of considerable antiquity, and is said to have been founded by a Tomar chief of AHĀR named Parmāl, or according to another account by a man named Ahibaran, from whom

its name was derived. Buddhist remains of the fifth to seventh centuries have been found here, besides coins of much older date. In the eleventh century the town was the head-quarters of Har Dat, a Dor chieftain who ruled in this part of the Doāb, with territory extending as far as Hāpur and Meerut. In 1018 Mahmūd of Ghazni crossed the Jumna and reached Baran. In the words of the Persian historian, Har Dat 'reflected that his safety would be best secured by conforming to the religion of Islām, since God's sword was drawn from the scabbard and the whip of punishment was uplifted. He came forth, therefore, with 10,000 men, who all proclaimed their anxiety for conversion and their rejection of idols.' The town was given back to Har Dat, but from a copperplate inscription the Dors appear to have been superseded for a time. They were restored; and Chandra Sen, the last Hindu ruler, died while gallantly defending his fort against Kutb-ud-dīn, the general of Muhammad Ghorī, in 1193. The town is chiefly famous in later times as having been the birthplace of the historian, Ziā-ud-dīn Barnī, who flourished in the first half of the fourteenth century. There are a few tombs and mosques of the Muhammadan period, but none of importance. At the commencement of British rule, Bulandshahr was a small town. A few good houses stood on the elevation now known as the Bālāe Kot, and Chamārs and Lodhas lived in huts at the base. The establishment of the District head-quarters here caused a rapid growth; and the town has been much improved by the energy and taste of its inhabitants, encouraged by several Collectors, especially the late Mr. F. S. Growse. The Chauk or central market has been provided with a brick terrace and is adorned with carved stone, while the houses and shops surrounding it are elegant specimens of domestic architecture. The rich landlords of the District have also erected several fine houses and gateways and a town hall, all of which are remarkable for the excellence of the stonework which they contain. Close to the courts is a handsome building called the Lowe Memorial, in memory of a former Collector, which is used as a shelter for people attending the courts. A fine bathing *ghāt* has been made on the banks of the river at the eastern entrance of the town. A dispensary and a female hospital were built in 1895. Besides the ordinary District staff, an Executive Engineer of the Ganges Canal has his head-quarters here. There are also stations of the American Methodist, Church Missionary Society, and Zanāna Bible and Medical Missions.

Bulandshahr has been a municipality since 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 18,000. In 1903–4 the income was Rs. 21,000, chiefly derived from octroi (Rs. 18,000), and the expenditure was Rs. 24,000. Wood-carving of some artistic merit is turned out. The distance from the railway has hitherto prevented the growth of trade, which is of a local nature. A line is, however, now under construction. A high school contains more than 200 pupils and a *tahsīlī* school 230, while four primary schools have 220 more.

Chhatārī.—Town in the Khurja *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 6′ N. and 78° 9′ E., 30 miles south of Bulandshahr town. Population (1901), 5,574. The town takes its name from the Chhatardhārī clan of Mewātīs who founded it. It belongs to the estate of the same name founded by Mahmūd Alī Khān, a brother of Murād Alī Khān of PAHĀSŪ. The estate is at present under the Court of Wards, as the owner, Ahmad Saiyid Khān, is a minor. Chhatārī is administered under Act XX of 1856, with an income of about Rs. 800. There is a primary school with about 120 pupils.

Dankaur.—Town in the Sikandarābād *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 21′ N. and 77° 33′ E., 20 miles west of Bulandshahr town. Population (1901), 5,444. It is said to have been founded by Drona, the hero of the Mahābhārata, who taught the Pāndavas the use of arms. A masonry tank and ancient temple are still known as Dronācharj. The town lies on the edge of the high bank above the Jumna, and the upper portion is gradually being deserted for the lower, on the ground that it is unlucky. Dankaur is administered under Act XX of 1856, with an income of about Rs. 1,300. It has a thriving trade in *ghī*, sugar, and grain. A primary school is attended by 80 pupils.

Dibai.—Town in the Anūpshahr *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 12′ N. and 78° 16′ E., close to the metalled road from Alīgarh to Morādābād and a branch of the Oudh and Rohilkhand Railway. Population (1901), 10,579, which is increasing rapidly. The town is said to have been called Dhundhgarh in the eleventh century, when it belonged to Dhākrā Rājputs, who were expelled by Saiyid Sālār Masūd. A new town was built, called Dhundai, and later Dibai. In the time of Akbar it was the head-quarters of a *pargana* in the *sarkār* of Koil. The bazar is composed of brick-built houses, and the town is fairly well drained by

the Chhoiyā river, which flows round three sides. Dibai is administered under Act XX of 1856, with an income of about Rs. 5,000. It is a prosperous town, with three cotton gins, a cotton press, and an oil press, employing nearly 500 persons. There are large exports of coarse cloth, cotton, *ghī*, and grain. It contains a flourishing Anglo-vernacular school with 75 pupils, partly supported by market fees and partly by private subscriptions, and a middle school with 150 pupils.

Gulaothī.—Town in the District and *tahsīl* of Bulandshahr, United Provinces, situated in 28° 35′ N. and 77° 48′ E., 12 miles north of Bulandshahr town on the Meerut road. Population (1901), 7,208. The town is said to have been founded by Mewātīs or by Gahlot Rājputs. It is chiefly inhabited by Saiyids and Baniās. A prominent Saiyid, named Mihrbān Alī, who died a few years ago, did much to improve the town and its approaches. He built several houses, metalled the road to the Kālī Nadī, and built a bridge across it at a cost of Rs. 30,000, and also constructed a large mosque and established a school for teaching Arabic and Persian. The American Methodist Mission has a branch here. Gulaothī is administered under Act XX of 1856, with an income of about Rs. 1,800. It has a considerable local trade and is thriving. There is a middle school with about 200 pupils.

Jahāngīrābād.—Town in the Anūpshahr *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 24′ N. and 78° 6′ E., 15 miles by metalled road from Bulandshahr town. Population (1901), 11,572. The town was built by Anūp Rai, founder of ANŪPSHAHR, who named it after the emperor Jahāngīr. The place stands low, and was formerly very unhealthy, owing to the stagnant water in the neighbourhood and a ditch round the town; but this has now been drained. Act XX of 1856 is in force, and the annual income is about Rs. 3,300. There is an important market, which is the centre of a flourishing grain trade. The principal manufacture is calico-printing, excellent counterpanes, curtains, and cloths being turned out. The middle school is attended by over 250 pupils, 40 of whom reside in a boarding-house, and there is a small aided primary school with 38 pupils.

Jewar.—Town in the Khurja *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 7′ N. and 77° 34′ E., 20 miles west of Khurja. Population (1901), 7,718. In the eleventh century Jādon Rājputs, invited from Bharatpur by the Brāhmans of Jewar, settled in the town and expelled the Meos. The well-known Begam Sumrū held Jewar till her

death in 1836, when it lapsed to Government. The town lies among the ravines and broken ground on the edge of the high land above the Jumna, and is well drained. The market was rebuilt in 1881, and is now lined with good brick-built shops. Jewar is administered under Act XX of 1856, with an income of about Rs. 2,000. There is a small manufacture of cotton rugs and carpets, and a weekly market is held. The town contains a prosperous agricultural bank, a middle school with 120 pupils, and a small primary school for girls, besides a branch of the American Methodist Mission.

Khurja Town.—Head-quarters of the *tahsīl* of the same name in Bulandshahr District, United Provinces, situated in 28° 15′ N. and 77° 51′ E., near the grand trunk road, and 4 miles from Khurja station on the East Indian Railway. Population (1901), 29,277, of whom 15,878 are Hindus and 12,923 Musalmāns. The town is said to derive its name from *khārija* ('revenue free'), as it was built by the Bhāle Sultān Rājputs on a revenue-free grant made by Fīroz Shāh Tughlak. The descendants of the original grantees retained possession of their holdings till they were resumed partly by Sūraj Mal, Rājā of Bharatpur, in 1740, and partly by Daulat Rao Sindhia towards the close of the eighteenth century. There is only one ancient building, the tomb of Makhdūm Sāhib, near the grand trunk road, which is about 400 years old. The chief public buildings are the *tahsīlī*, dispensary, and town hall. The principal inhabitants are Kheshgī Pathāns and Churūwāl Baniās; the latter, who are Jain by religion, are an enterprising and wealthy class, carrying on banking all over India and taking a leading share in the trade of the place. Thirty years ago they built a magnificent domed temple, which cost more than a lakh and is adorned with a profusion of stone carving of fine execution. The interior is a blaze of gold and colour, the vault of the dome being painted and decorated in the most florid style of indigenous art. The market-place, bazar, and *dharmsāla* are all adorned by handsome gateways of carved stone, and owe much to the munificence of the Jain traders. There are branches of the American Methodist and Zanāna Bible and Medical Missions.

Khurja has been a municipality since 1866. The receipts and expenditure during the ten years ending 1901 averaged Rs. 27,500. In 1903–4 the income was Rs. 38,000, chiefly derived from octroi (Rs. 28,000), and the expenditure was Rs. 42,000. The town is the chief commercial centre of the

District, and contains seven cotton gins and presses, which employed 444 hands in 1903. Cotton-ginning by hand is important, and there is a very large export of grain, besides a smaller trade in indigo, sugar, and *ghī*. The pottery of Khurja resembles that made at MULTĀN and in the RĀMPUR STATE, and has some reputation. English cloth, metals, and brass utensils are the chief articles imported. There are eight schools with about 600 pupils.

Pahāsū.—Town in the Khurja *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 10′ N. and 78° 5′ E., 24 miles south of Bulandshahr town. Population (1901), 5,603. Partāb Singh, one of the first Bargūjar immigrants, made it his head-quarters. Pahāsū was the chief town in a *mahāl* or *pargana* under Akbar, and in the eighteenth century was conferred with a *jāgīr* of fifty-four villages by Shāh Alam II on the Begam Sumrū for the support of her troops. After her death in 1836, it was held for a time by Government and then granted in 1851 to Murād Alī Khān, a descendant of Partāb Singh. His son, Nawāb Faiz Alī Khān, K.C.S.I., behaved with conspicuous loyalty during the Mutiny, and was afterwards commander-in-chief and prime minister of Jaipur State. Since his death in 1894, his son, Nawāb Faiyāz Alī Khān, C.S.I., has served as a member of the Imperial and Provincial Legislative Councils, and is now a minister of state in Jaipur. The town is administered under Act XX of 1856, with an income of about Rs. 900. The Nawāb maintains a dispensary and an Anglo-vernacular school, and there is a primary school with 95 pupils.

Rabūpura.—Town in the Khurja *tahsīl* of Bulandshahr District, United Provinces, situated in 28° 15′ N. and 77° 37′ E., 19 miles west of Bulandshahr town. Population (1901), 5,048. The place was founded by a Mewātī named Rabū in the eleventh century. The Mewātīs were ousted by the Jaiswār Rājputs in the time of Prithwī Rāj, late in the twelfth century. From the days of Shāh Alam II up to 1857, Rabūpura was the centre of an estate comprising twenty-four villages, which was confiscated after the Mutiny for the rebellion of the proprietors. The town contains a good brick market, and half the houses and shops are also of brick. The American Methodist Mission has a branch here, with a small church and dispensary. Rabūpura is administered under Act XX of 1856, with an income of about Rs. 1,300. There is a considerable trade in cattle. The primary school contains 60 pupils.

Shikārpur.—Town in the District and *tahsīl* of Buland-

shahr, United Provinces, situated in 28° 17′ N. and 78° 1′ E., 13 miles south of Bulandshahr town. Population (1901), 12,249. The present town owes its existence to Sikandar Lodī, who built a hunting-lodge here at the end of the fifteenth century, near the site of an older town now represented by a mound called the Talpat Nagarī or Anyai Khera. North of the site is a remarkable building of red sandstone called the Bāra Khamba, or 'twelve pillars,' which formed an unfinished tomb begun by Saiyid Fazl-ullah, son-in-law of the emperor Farrukh Siyar, about 1718. The town contains a fine walled *sarai* built in the seventeenth century, and many substantial brick houses and a few handsome mosques. The American Methodists have a branch mission here. The town is administered under Act XX of 1856, with an income of about Rs. 4,500. The chief manufactures are cotton cloth and shoes, and excellent wood-carving is turned out on a small scale. There are a middle school with 190 pupils, and an aided primary school with 30.

Sikandarābād Town.—Head-quarters of the *tahsīl* of the same name in Bulandshahr District, United Provinces, situated in 28° 28′ N. and 77° 42′ E., on the grand trunk road, 4 miles from the Sikandarābād station on the East Indian Railway. Population (1901), 18,290, of whom 10,599 are Hindus and 6,814 Musalmāns. The town was built by Sikandar Lodī in 1498, and was the head-quarters of a *pargana* or *mahāl* under Akbar. In the eighteenth century it was held for a time by Najīb-ud-daula. Saādat Khān, Nawāb of Oudh, attacked and defeated a Marāthā force here in 1736. The Jāt army of Bharatpur encamped at Sikandarābād in 1763, but fled across the Jumna on the death of Sūraj Mal and defeat of Jawāhir Singh. Under Marāthā rule the town was the head-quarters of a brigade under Perron; and after the fall of Alīgarh, Colonel James Skinner held it. During the Mutiny of 1857, the neighbouring Gūjars, Rājputs, and Muhammadans attacked and plundered Sikandarābād; but Colonel Greathed's column relieved the town on September 27, 1857. There are several tombs and mosques of some antiquity. Besides the *tahsīlī* and police station there is a dispensary; and the American Methodists, the Church Missionary Society, and the Zanāna Bible and Medical Mission have branches here. Sikandarābād has been a municipality since 1872. During the ten years ending 1901 the income and expenditure averaged Rs. 15,000. In 1903–4 the income was Rs. 23,000, chiefly derived from octroi (Rs. 17,000), and the expenditure was Rs. 21,000. There is not much trade;

but fine cloth or muslin is manufactured and exported to Delhi, and a cotton gin has been recently opened, which employed 105 hands in 1903. The town contains a flourishing Anglo-vernacular school with more than 200 pupils, a *tahsīlī* school with 120, and five primary schools with 240 pupils.

Siyānā.—Town in the District and *tahsīl* of Bulandshahr, United Provinces, situated in 28° 37′ N. and 78° 4′ E., 19 miles north-east of Bulandshahr town. It is being connected by a metalled road with Bulandshahr and Garhmuktesar. Population (1901), 7,615. The name is said to be a corruption of Sainban or 'the forest of rest,' because Balarāma, brother of Krishna, on his way from Muttra to Hastināpur, slept here one night, and was hospitably entertained by *fakīrs*, who had excavated a tank in the centre of a vast forest. The town gave its name to a *mahāl* or *pargana* recorded in the *Ain-i-Akbarī*. After the British conquest it was the head-quarters of a *tahsīldār* and Munsif up to 1844. It is now of small importance, but has been improved lately, and the mud huts are being replaced by brick houses. It is administered under Act XX of 1856, the income being about Rs. 1,800. There was formerly some trade in safflower, but it is declining. Indigo is still made in a small factory. A middle school with a boarding-house is attended by about 160 pupils.

Boundaries, configuration, and river system.

Alīgarh District.—Southernmost District in the Meerut Division, United Provinces, lying between 27° 29′ and 28° 11′ N. and 77° 29′ and 78° 38′ E., with an area of 1,946 square miles. It is bounded on the north by Bulandshahr District; on the east and south by Etah; and on the west and south by Muttra. The Jumna separates the north-west corner from the Punjab District of Gurgaon, and the Ganges the north-east corner from Budaun. Bordering on the great rivers lie stretches of low land called *khādar*. The Ganges *khādar* is fertile and produces sugar-cane, while the Jumna *khādar* is composed of hard unproductive clay, chiefly covered with coarse jungle grass and tamarisk. The rest of the District forms a fertile upland tract traversed by three streams. The most important is the KĀLĪ NADĪ (EAST), which winds across the eastern portion. Between the Kālī Nadī and the Ganges lies the Nīm Nadī, with an affluent known as the Chhoiyā. In the west of the District the Karon or Karwan flows through a wide valley. The centre is a shallow depression, the drainage of which gradually collects in two streams named the Sengar and the Rind or Arind.

Geology.

The District is composed of alluvium; but *kankar* or lime-

stone is found in nodules and also consolidated in masses, from which it is quarried for building purposes. Large stretches of land are covered with saline efflorescences.

Botany. The flora of Alīgarh presents no peculiarities. At the commencement of British rule the surface of the country was covered with large tracts of jungle, chiefly of *dhāk* (*Butea frondosa*). The jungle was rapidly cut as cultivation extended, and for many years was not replaced. Between 1870 and 1900, however, the area under groves doubled, and is now about 18 square miles. The principal trees are *babūl* (*Acacia arabica*), *nīm* (*Melia Azadirachta*), and mango. Better sorts of timber for building purposes have to be imported.

Fauna. Wild hog are very numerous in the *khādar*, and are also found near the canal. Antelope are fairly common in most parts. In the cold season snipe and many kinds of duck appear on the swamps. Fish are plentiful, but are not much eaten, and there are no regular fisheries in the District.

Climate and temperature. The climate of Alīgarh is that of the Doāb plains generally. The year is divided into the rainy season, from June till October; the cold season, from October till April; and the hot season, from April to June.

Rainfall. The annual rainfall averages about 26 inches, and there is little variation in the District; the north-east receives slightly more rain than the south-west. Fluctuations from year to year are more considerable. In 1894–5 the fall was 33 inches, while in 1896–7 it was only 19 inches.

History. The few facts in the early annals of the District that can now be recovered centre around the ancient city of Koil, of which the fort and station of Alīgarh form a suburb. A popular legend informs us that Koil owes its origin to one Koshārab, a Kshattriya of the Lunar race, who called the city after his own name; and that its present designation was conferred upon it by Balarāma, who slew the great demon Kol, and subdued the neighbouring regions of the Doāb. Another tradition assigns a totally different origin to the name. The District was held by the Dor Rājputs before the first Muhammadan invasion, and continued in the hands of the Rājā of Baran until the close of the twelfth century. In A.D. 1194 Kutb-ud-dīn marched from Delhi to Koil, on which occasion, as the Muhammadan historian informs us, 'those who were wise and acute were converted to Islām, but those who stood by their ancient faith were slain with the sword.' The city was thenceforward administered by Musalmān governors, but the native Rājās retained much of their former power.

The District suffered during the invasion of Tīmūr in the fourteenth century, and participated in the general misfortunes which marked the transitional period of the fifteenth. After the capture of Delhi by the Mughals, Bābar appointed his follower, Kachak Alī, governor of Koil (1526). Many mosques and other monuments still remain, attesting the power and piety of the Musalmān rulers during the palmy days of the Mughal dynasty. The period was marked, here as elsewhere, by frequent conversions to the dominant religion. But after the death of Aurangzeb, the District fell a prey to the contending hordes who ravaged the Doāb. The Marāthās were the first in the field, closely followed by the Jāts. About the year 1757, Sūraj Mal, a Jāt leader, took possession of Koil, the central position of which, on the roads from Muttra and Agra to Delhi and Rohilkhand, made it a post of great military importance. The Jāts in turn were shortly afterwards ousted by the Afghāns (1759), and for the next twenty years the District became a battle-field for the two contending races. The various conquests and reconquests which it underwent had no permanent effects, until the occupation by Sindhia took place in 1784. The District remained in the hands of the Marāthās until 1803, with the exception of a few months, during which a Rohilla garrison was placed in the fort of Alīgarh by Ghulām Kādir Khān. Alīgarh became a fortress of great importance under its Marāthā master; and was the dépôt where De Boigne drilled and organized his battalions in the European fashion. When, in 1802, the triple alliance between Sindhia, the Rājā of Nāgpur, and Holkar was directed against the British, the Nīzām, and the Peshwā, Alīgarh was under the command of Sindhia's French general, Perron, while the British frontier had already advanced to within 15 miles of Koil. Perron undertook the management of the campaign; but he was feebly seconded by the Marāthā chieftains, who waited, in the ordinary Indian fashion, until circumstances should decide which of the two parties it would prove most to their interest to espouse. In August, 1803, a British force under Lord Lake advanced upon Alīgarh, and was met by Perron at the frontier. The enemy did not wait after the first round of grape from the British artillery, and Perron fled precipitately from the field. Shortly after he surrendered himself to Lord Lake, leaving the fort of Alīgarh still in the possession of the Marāthā troops, under the command of another European leader. On September 4 the British moved forward to the assault; but they found the fortifications

planned with the experience of French engineers, and defended with true Marāthā obstinacy. It was only after a most intrepid attack and an equally vigorous resistance that the fortress, considered impregnable by the natives, was carried by the British assault; and with it fell the whole of the Upper Doāb to the very foot of the Siwāliks. The organization of the conquered territory into British Districts was undertaken at once. After a short period, during which the *parganas* now composing the District of Alīgarh were distributed between Fatehgarh and Etāwah, the nucleus of the present District was separated in 1804. Scarcely had it been formed when the war with Holkar broke out, and his emissaries stirred up the discontented revenue-farmers who had made fortunes by unscrupulous oppression under the late Marāthā rule to rise in rebellion against the new Government. This insurrection was promptly suppressed (1805). A second revolt, however, occurred in the succeeding year; and its ringleaders were only driven out after a severe assault on their fortress of Kamonā. Other disturbances with the revenue-farmers arose in 1816, and it became necessary to dismantle their forts. The peace of the District was not again interrupted until the outbreak of the Mutiny.

News of the Meerut revolt reached Koil on May 12, 1857, and was at once followed by the mutiny of the native troops quartered at Alīgarh, and the rising of the rabble. The Europeans escaped with their lives, but the usual plunderings and burnings took place. Until July 2 the factory of Mandrak was gallantly held by a small body of volunteers in the face of an overwhelming rabble; but it was then abandoned, and the District fell into the hands of the rebels. A native committee of safety was formed to preserve the city of Koil from plunder; but the Musalmān mob ousted them, and one Nasīm-ullah took upon himself the task of government. His excesses alienated the Hindu population, and made them more ready to side with the British on their return. The old Jāt and Rājput feuds broke out meanwhile with their accustomed fury; and, indeed, the people indulged in far worse excesses towards one another than towards the Europeans. On August 24 a small British force moved upon Koil, when the rebels were easily defeated, and abandoned the town. Various other bodies of insurgents afterwards passed through on several occasions, but the District remained substantially in our possession; and by the end of 1857 the rebels had been completely expelled from the Doāb.

Archaeology.

There are many ancient mounds in the District where carvings of the Buddhist and early Hindu periods have occasionally been exposed, but none of these has been explored. The principal Muhammadan buildings are at Alīgarh and Jalālī.

The people.

The District contains 23 towns and 1,753 villages. At the last four enumerations the population was as follows: (1872) 1,073,256, (1881) 1,021,187, (1891) 1,043,172, and (1901) 1,200,822. In 1876-7 the District suffered from famine, and in 1879 from fever. Owing to the extension of canal-irrigation, it escaped in 1896-7. There are six *tahsīls*—ATRAULĪ, ALĪGARH, IGLĀS, KHAIR, HĀTHRAS, and SIKANDRA RAO—the head-quarters of each being at a place of the same name. The chief towns are the municipalities of Koil or ALĪGARH, the head-quarters of the District, HĀTHRAS, ATRAULĪ, and SIKANDRA RAO. The following table gives the principal statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Atraulī . .	343	4	289	198,034	577	+ 20.7	3,396
Alīgarh . .	356	3	342	268,012	753	+ 16.6	11,523
Iglās . .	213	1	209	118,803	558	+ 10.8	2,589
Khair . .	407	3	272	178,867	439	+ 18.7	2,927
Hāthras . .	290	5	393	225,574	778	+ 8.3	8,795
Sikandra Rao .	337	7	248	211,532	628	+ 15.5	5,308
District total	1,946	23	1,753	1,200,822	612	+ 15.1	34,538

Castes and occupations.

The most numerous castes among Hindus are the Chamārs (leather-workers and labourers), 223,000; Brāhmans, 131,000; Jāts, 108,000; Rājputs, 91,000; Baniās, 45,000; Lodhas (cultivators), 40,000; Gadariās (cultivators and shepherds), 36,000; Korīs (weavers), 30,000; Kāchhīs (cultivators), 22,000; and Khatīks (poulterers and gardeners), 21,000. Jāts belong chiefly to the west of the United Provinces, and Kāchhīs and Lodhas to the centre. The Musalmāns are for the most part descended from converted Hindus. Shaikhs number 26,000; Pathāns, 20,000; Rājputs, 13,000; Saiyids, 6,000; and Mewātīs, 6,000. Agriculturists form 47 per cent. of the total population. Rājputs own 23 per cent. of the total area, Jāts 20 per cent., Brāhmans 14 per cent., and Baniās 13 per cent. Brāhmans, Rājputs, and Jāts hold the largest areas as cultivators. General labour supports 13 per cent. of the population, personal

services 10 per cent., weaving 3 per cent., and grain-dealing 3 per cent.

Of the 4,900 native Christians, more than 4,700 belong to the Methodist Episcopal Church, which started work here in 1885 and has ten branches in the District. The Church Missionary Society has had a station at Alīgarh since 1863, and also has a branch at Hāthras. Christian missions.

In the western *tahsīls*, Khair and Iglās, there are distinct sandy ridges, and the eastern part of the District also contains light soil. There are other sandy tracts near the rivers. In the central depression the chief characteristic is the presence of extensive plains of barren land called *ūsar*. In many cases these are covered with saline efflorescences (*reh*). There is a sharp distinction between the homelands and the outlying portion of each village, the former receiving most of the manure. The best lands are double cropped, and sugar-cane is little grown. General agricultural conditions.

The tenures of the District are those commonly found, but a larger area than usual is held *zamīndāri*, which includes 2,199 *mahāls* out of 3,334. Of the remainder, 649 *mahāls* are *pattīdāri* and 486 *bhaiyāchārā*. There are also a few *talukdāri* estates, the chief of which, MURSĀN, is described separately. Settlement is invariably made in these with the subordinate proprietors or *biswādārs*, who pay into the treasury the amount due to the *talukdārs*. The principal agricultural statistics for 1903-4, according to the village papers, are given below, in square miles:— Chief agricultural statistics and principal crops.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Atraulī	343	266	123	26
Alīgarh	356	246	167	21
Iglās	213	187	78	9
Khair	407	292	119	56
Hāthras	290	239	113	11
Sikandra Rao	337	218	164	19
Total	1,946	1,448	764	142

The chief food-crops with their area (in square miles) in 1903-4 were: wheat (386), barley (281), *jowār* (188), gram (203), maize (139), *bājra* (148), and *arhar* (78). The most important of the other crops is cotton (138).

Some experiments have been made in the reclamation of *ūsar* land, but only with partial success. The most important Improvements in

agricultural practice.

of these was the establishment of a dairy farm at Chherat near Alīgarh. In some places plantations of *babūl* trees have been made in barren soil. Satisfactory features are the increase in the area of wheat grown by itself for export, and in the double-cropped area. The area under gram is decreasing. From 1891 to 1900 the advances under the Agriculturists' Loans Act amounted to Rs. 61,000, of which Rs. 14,000 was lent in 1896-7. In 1903-4, Rs. 1,700 was advanced. Slightly larger advances have been taken under the Land Improvement Loans Act, amounting to Rs. 72,000 during the ten years ending 1900, and to as much as Rs. 13,000 in 1903-4. A large agricultural show is held annually at Alīgarh. Important drains have been made in several parts of the District, especially in the central depression; but in the south-west of the District the spring-level has sunk considerably.

Cattle, horses, and sheep.

There is no peculiar breed of cattle or sheep, and the best cattle are imported from beyond the Jumna. Horse-breeding has, however, become popular, and a number of stallions are maintained by Government. Since 1903 operations have been in charge of the Army Remount department.

Irrigation.

The Upper Ganges Canal passes through the centre of the District. East of the Kālī Nadī the Anūpshahr branch of the same work supplies part of the Atraulī *tahsīl*, and west of the Karon the Māt branch supplies Khair. The Lower Ganges Canal crosses the east of the District, but supplies no irrigation to it. The Iglās and Hāthras *tahsīls* are at present practically without canal-irrigation, but two distributaries have been projected to water the tract east of the Karon. The total area irrigated from canals in 1903-4 was 229 square miles. Well-irrigation is at present still more important, the area supplied in this way being 515 square miles. Other sources are insignificant. The Irrigation department maintains about 330 miles of drains.

Minerals.

The chief mineral product of the District is *kankar*, which is used for road-making and for building. In the Sikandra Rao *tahsīl* saltpetre and glass are manufactured from saline efflorescences.

Arts and manufactures.

The principal manufactures of the District are the weaving of cotton cloth and of cotton rugs and carpets, the latter being especially noted. Since 1904 the manufacture of indigo has been almost abandoned; and not one of seventy-five factories, which used to employ 4,500 hands, was working in that year. The postal workshops supply the Post Office department with numerous articles, and employ about 300

hands. There are three lock works with 320 workmen. Although the area under cotton has decreased, there were more than twenty steam gins and presses with 1,781 hands in 1903, and one cotton-spinning mill with 516 hands. The District also contains an important dairy farm, and there is a small manufacture of dried meat for Burma. The most striking feature of the industries in Alīgarh is the large extent to which they have been developed and maintained by native capital and management.

Commerce. Grain and cotton are the principal articles of export; but oilseeds, saltpetre, and country glass are also considerable items. Sugar, rice, piece-goods, spices, metals, and timber form the chief imports. Hāthras is by far the most important centre of trade, ranking second in the United Provinces to Cawnpore. The trade and importance of Koil or Alīgarh is, however, increasing, and Atraulī and Harduāganj are also thriving. The commerce of the District is largely with Cawnpore, Bombay, and Calcutta.

Railways and roads. Alīgarh is well supplied with means of communication. The East Indian Railway passes through it from south to north, and a branch of the Oudh and Rohilkhand Railway from Morādābād and Bareilly meets it at Alīgarh. The south of the District is crossed by the metre-gauge Cawnpore-Achhnerā section of the Rājputāna-Mālwā Railway; and Hāthras, which lies on this line, is also connected by a broad-gauge line with the East Indian Railway.

There are 243 miles of metalled roads, all in charge of the Public Works department, though 125 miles are maintained at the cost of Local funds. Besides these, 338 miles of unmetalled roads are also maintained by, and at the cost of, the District board. Every *tahsīlī* town is connected by metalled road with the District head-quarters. The through lines which cross the District are the grand trunk road, the Muttra-Kāsganj road, and the Agra-Morādābād road. Avenues of trees are maintained on about 90 miles.

Famine. Alīgarh suffered severely from famine in former times. In 1783-4 many villages were deserted, and the memory of this terrible famine long survived. Droughts periodically caused more or less severe scarcity in the early years of the nineteenth century, culminating in the great famine of 1837. By 1860-1 the canal had made its influence felt; and in 1868-9 distress was confined to the areas not protected, and grain was exported to the Punjab and Central Provinces. In 1887 there was considerable distress in the same areas; but in 1896-7 the District

hardly suffered at all, owing to recent extensions and improvements in the canal system. Private charity was sufficient to relieve the many immigrants from more distressed areas.

District sub-divisions and staff. The Collector is usually assisted by a member of the Indian Civil Service, and by three or four Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each *tahsīl*. Besides the ordinary staff, two Executive Engineers of the Upper and Lower Ganges Canals are stationed in the District.

Civil justice and crime. There are three Munsifs, a Subordinate Judge, and an additional Subordinate Judge. The District and Sessions Judge is assisted by an additional Judge, and both of these have civil and criminal jurisdiction over the whole of Bulandshahr (excluding the Sikandarābād *tahsīl*), Alīgarh, and Etah Districts. Organized dacoities are common, especially in the south of the District. Cattle-lifting is still prevalent in the tract bordering on the Jumna, where many small Gūjar and Jāt landholders, in co-operation with receivers in the Punjab, levy blackmail from the owners of lost cattle, who prefer to recover their property in this way rather than to call in the police. Hābūrās and Aheriās are small criminal tribes, who are responsible for many thefts and burglaries; but they differ widely, the former being mostly gipsies and the latter resident criminals. Infanticide was formerly prevalent, but no villages are now proclaimed.

Land revenue administration. A District of Alīgarh was first formed in 1804, but several additions and alterations were made both before and after 1824, when the District approximately took its present shape. The early land revenue settlements were for the usual short periods, and were chiefly remarkable for the length of time during which the revenue was farmed, instead of being settled direct with the village *zamīndārs*. In 1833 the first regular settlement was commenced, and the circumstances of the *talukas* were carefully examined. Where village proprietors did not exist, the *talukdār* received full proprietary rights; where the original proprietors survived, settlement was made with them, and the amount payable to the *talukdār* through Government was fixed. The settlement, which was based on assumed rent rates, amounted to 18.4 lakhs on the present area. The revenue at the next revision between 1867 and 1874 was also based on soil rates; but these were tested by the recorded rates, though the latter were generally rejected as inadequate, and the standard rates were modified according to the circumstances of individual villages. The demand was

fixed at 21·5 lakhs. Another revision was made between 1899 and 1903, when the rent-rolls were found to be generally accurate, but the competition rents were reduced in calculating the revenue, and the occupancy rents were enhanced. The new revenue amounts to 24·5 lakhs, and the incidence is Rs. 1·9 per acre, varying from Rs. 1·6 to Rs. 3·4 in different *tahsīls*. The total receipts, in thousands of rupees, on account of revenue from land and from all sources have been :—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue .	21,34	20,88	21,87	24,16
Total revenue .	25,07	29,28	32,54	34,91

Local self-government. There are four municipalities and nineteen towns administered under Act XX of 1856. Outside these, local affairs are managed by the District board, which has an income of about 2 lakhs, chiefly derived from local rates. The expenditure in 1903–4 was 2 lakhs, of which Rs. 73,000 was spent on roads and buildings.

Police and jails. The District Superintendent of police is in charge of a force of 4 inspectors, 96 subordinate officers, and 442 constables, besides 374 municipal and town police, and 2,033 rural and road police. The District jail contained a daily average of 350 prisoners in 1903.

Education. In 1901 the number of persons able to read and write was 2·9 per cent. (5·2 males and 0·2 females), Musalmāns showing a slightly higher percentage than Hindus. While the number of public institutions fell from 221 in 1880–1 to 204 in 1900–1, the pupils increased from 6,722 to 10,060. In 1903–4 there were 226 schools with 11,760 pupils, including 563 girls, besides 350 private schools with 5,592 pupils, of whom 27 were girls. The most important institution is the Muhammadan Anglo-Oriental College at ALĪGARH. Of the public institutions, 4 are managed by Government and 160 by the District and municipal boards, the rest being chiefly aided schools. In 1903–4 the total expenditure on education was 1·8 lakhs, of which Rs. 52,000 was met from fees, Rs. 45,000 from Local and municipal funds, and Rs. 25,000 from Provincial revenues.

Hospitals and dispensaries. There are 15 hospitals and dispensaries, with accommodation for 185 in-patients. In 1903 the number of cases treated was 126,000, of whom 2,591 were in-patients, and 5,963 operations were performed. The total expenditure was Rs. 23,000, chiefly met from Local funds.

Vaccination. About 42,000 persons were successfully vaccinated in 1903–4, representing 35 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[*District Gazetteer* (1875, under revision); W. J. D. Burkitt, *Settlement Report* (1903).]

Atraulī Tahsīl.—North-eastern *tahsīl* of Alīgarh District, United Provinces, comprising the *parganas* of Atraulī and Gangīrī, and lying between 27° 48′ and 28° 9′ N. and 78° 12′ and 78° 38′ E., with an area of 343 square miles. The population rose from 164,073 in 1891 to 198,034 in 1901. There are 289 villages and four towns, the largest of which is Atraulī (population, 16,561), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 3,77,000, and for cesses Rs. 61,000. The Ganges forms part of the northern boundary, and the Kālī Nadī skirts the *tahsīl* on the west and south. The Nīm Nadī and its tributary the Chhoiyā flow through the middle. Between the Ganges and Nīm Nadī the soil is naturally sandy, except in the Ganges *khādar*, which is a rich alluvial deposit; irrigation is provided by the Anūpshahr branch of the Upper Ganges Canal. The rest of the *tahsīl* is a good loam tract, except where patches of *ūsar* land are found. In 1903–4 the area under cultivation was 266 square miles, of which 123 were irrigated.

Alīgarh Tahsīl (or Koil).—Central northern *tahsīl* of Alīgarh District, United Provinces, comprising the *parganas* of Koil, Morthal, and Baraulī, and lying between 27° 46′ and 28° 8′ N. and 77° 55′ and 78° 17′ E., with an area of 356 square miles. The population rose from 229,767 in 1891 to 268,012 in 1901. There are 342 villages and three towns: Alīgarh or Koil (population, 70,434), the District and *tahsīl* head-quarters, Jalālī (8,830), and Harduāganj (6,619). The demand for land revenue in 1903–4 was Rs. 4,57,000, and for cesses Rs. 76,000. On the east the *tahsīl* is bounded by the Kālī Nadī. In the centre lies a depression which has been much improved by two main-drainage cuts, and the *tahsīl* is now one of the most prosperous in the District; ample irrigation is provided by the Upper Ganges Canal. In 1903–4 the area under cultivation was 246 square miles, of which 167 were irrigated.

Iglās.—Central western *tahsīl* of Alīgarh District, United Provinces, comprising the *parganas* of Hasangarh and Gorai, and lying between 27° 35′ and 27° 55′ N. and 77° 47′ and 78° 3′ E., with an area of 213 square miles. Population increased from 107,227 in 1891 to 118,803 in 1901. There are 209

villages and one town, Beswān (population, 2,871). The demand for land revenue in 1903–4 was Rs. 2,96,000, and for cesses Rs. 49,000. The *tahsīl* is intersected by high ridges of sandy soil with good loam between. There is no canal-irrigation, and well-irrigation has become more difficult of late years owing to a fall in the spring-level. In 1903–4 the area under cultivation was 187 square miles, of which only 78 were irrigated.

Khair.—North-western *tahsīl* of Alīgarh District, United Provinces, comprising the *parganas* of Khair, Chandaus, and Tappal, and lying between 27° 51′ and 28° 11′ N. and 77° 29′ and 78° 1′ E., with an area of 407 square miles. The population rose from 150,656 in 1891 to 178,867 in 1901. There are 272 villages and three towns, none of which has as many as 5,000 inhabitants; Khair, the *tahsīl* head-quarters, has a population of 4,537. The density, 439 persons per square mile, is much below the District average. The demand for land revenue in 1903–4 was Rs. 4,11,000, and for cesses Rs. 66,000. The *tahsīl* is bounded on the west by the Jumna, and has a considerable area of *khādar* land in which nothing grows but coarse grass and tamarisk, the haunt of innumerable wild hog. Large herds of cattle are grazed by the Gūjar inhabitants of this tract, who are inveterate cattle-thieves. The Māt branch of the Upper Ganges Canal provides irrigation. In 1903–4 the area under cultivation was 292 square miles, of which 119 were irrigated.

Hāthras Tahsīl.—South-western *tahsīl* of Alīgarh District, United Provinces, comprising the *parganas* of Hāthras and Mursān, and lying between 27° 29′ and 27° 47′ N. and 77° 52′ and 78° 17′ E., with an area of 290 square miles. The population rose from 208,264 in 1891 to 225,574 in 1901. There are 393 villages and five towns, the largest of which is HĀTHRAS, the *tahsīl* head-quarters (population, 42,578). The density is 778 persons per square mile, while the District average is 612. The demand for land revenue in 1903–4 was Rs. 4,44,000, and for cesses Rs. 74,000. The eastern portion of the *tahsīl* lies low, and the drainage is naturally bad, but it has been much improved by artificial channels. There is no canal-irrigation, and well-irrigation has recently become more difficult owing to a fall in the spring-level; but an extension of the Māt branch of the Upper Ganges Canal is contemplated. In 1903–4 the area under cultivation was 239 square miles, of which 113 were irrigated.

Sikandra Rao Tahsīl.—South-eastern *tahsīl* of Alīgarh

District, United Provinces, comprising the *parganas* of Sikandra and Akrābād, and lying between 27° 32′ and 27° 53′ N. and 78° 10′ and 78° 32′ E., with an area of 337 square miles. The population rose from 183,185 in 1891 to 211,532 in 1901. There are 248 villages and seven towns, the largest of which are SIKANDRA RAO (population, 11,372), the *tahsīl* headquarters, and PILKHANA (5,109). The demand for land revenue in 1903-4 was Rs. 4,32,000, and for cesses Rs. 69,000. On the north-east the Kālī Nadī forms the boundary, and in the south one or two small streams rise. Irrigation is supplied by the Etāwah branch of the Upper Ganges Canal; and the *tahsīl* is one of the most prosperous in the District, in spite of the presence of large waste areas covered with saline efflorescences. In 1903-4 the area under cultivation was 128 square miles, of which 164 were irrigated.

Mursān.—An estate situated in the Alīgarh, Muttra, and Etah Districts of the United Provinces, with an area of 60 square miles. The demand for land revenue in 1903-4 was a lakh and for cesses Rs. 16,000, while the rent-roll was 2·1 lakhs. This is the most important Jāt estate in the United Provinces. In the sixteenth or seventeenth century a Jāt, named Makan, came from Rājputāna to the neighbourhood of Mursān town, and he and his descendants acquired considerable estates, partly by clearing waste land. The result was the formation of a number of *talukas* or baronies, linked together by the kinship of the owners. Nand Rām, head of the clan, submitted to Aurangzeb, when the latter had firmly established himself, and was appointed an administrative official. He died in 1695, leaving fourteen sons, the eldest of whom was called Zulkaran, and predeceased his father. The Jāt possessions were divided among the other children of Nand Rām; but Zulkaran's son, Khushāl Singh, who obtained only two villages, attracted the notice of Saādat Khān, Nawāb of Oudh, and was granted the farm of other property. In 1749 he was succeeded by Puhup Singh, who largely increased the estates he had inherited by obtaining from the *āmils* leases of villages which had fallen out of cultivation, or in which arrears of revenue were due. He also acquired a considerable share in the *talukas* left by Nand Rām, though dispossessed for a time by Sūraj Mal, Rājā of Bharatpur, and was the first of the family to assume the title of Rājā. In 1803 Bhagwant Singh, son of Puhup Singh, was allowed to engage for payment of revenue of all the estates held by him, without any detailed inquiry into their internal circumstances, and retained some independent

judicial authority. He also received a *jāgīr* for services rendered in Lord Lake's campaign. A few years later both Bhagwant Singh and Dayā Rām, *talukdār* of Hāthras, another descendant of Nand Rām, came into conflict with the authorities for persistent default in the payment of revenue and defiance of the courts, and in 1817 troops were sent against them. Dayā Rām at first resisted, and on the fall of Hāthras his estates were confiscated; but Bhagwant Singh surrendered. He was treated leniently, and his possessions were not escheated, though his special police jurisdiction was cancelled. On his death in 1823 the process of direct engagement with the village proprietors was commenced, and his son, Tīkam Singh, lost considerably. The separation of subordinate rights was completed in the first regular settlement, and was resisted in the courts by the Rājā, but without success. Owing to his loyalty in the Mutiny, Rājā Tīkam Singh received an abatement of Rs. 6,000 a year in his assessment, and was also created C.S.I. The present owner of the estate is Rājā Dat Prasād Singh, who succeeded a grandson of Tīkam Singh in 1902.

The principal place in the estate is Mursān, a small town on the Cawnpore-Achhnerā Railway, with a population (1901) of 4,395, which is administered under Act XX of 1856. A primary school here contains 120 pupils.

Alīgarh City.—Head-quarters of the District and *tahsīl* of the same name, in the United Provinces, situated in 27° 53′ N. and 78° 4′ E., on the grand trunk road, at the junction of a branch of the Oudh and Rohilkhand with the East Indian Railway, 876 miles by rail from Calcutta and 904 miles from Bombay. The native city lies west of the railway and is generally called Koil or Kol, Alīgarh being strictly the name of a fort beyond the civil station, on the east of the railway. Population has increased, especially in the last ten years. At the four enumerations the numbers were as follows: (1872) 58,539, (1881) 62,443, (1891) 61,485, and (1901) 70,434. Hindus number 41,076 and Musalmāns 27,518.

Various traditions explain the name of the city as derived from one Koshārab, a Kshattriya, or from a demon named Kol, who was slain by Balarāma, brother of Krishna. Buddhist and ancient Hindu remains prove the antiquity of the place; but nothing is known of its history till the twelfth century, when it was held by the Dor Rājputs, who were defeated by Kutb-ud-dīn, after a desperate struggle, in 1194. Koil then became the seat of a Muhammadan governor, and is recorded in the *Ain-i-Akbarī* as head-quarters of a *sarkār* in the *Sūbah* of

Agra. The later history of the place has been given under ALĪGARH DISTRICT. The fort lies three miles from Koil, and is surrounded by marshy land and pieces of water which add to its strength, especially in the rains. It was called Muhammadgarh in the sixteenth century, after Muhammad, the ruler of Koil under the Lodīs. About 1717 it was called Sābitgarh after Sābit Khān, another governor, and about 1757 the Jāts changed the name to Rāmgarh. The name Alīgarh was given by Najaf Khān, who took the place. It was strengthened by its successive holders; and De Boigne and Perron, the French generals in Marāthā employ, took great pains to render it impregnable. In 1803 Lord Lake captured the fort by storm, and said in his dispatch: 'From the extraordinary strength of the place, in my opinion British valour never shone more conspicuous.' The native troops at Alīgarh joined the Mutiny of 1857; and the town was plundered successively by the Mewātīs of the neighbouring villages, by the passing rebel soldiery, by Nasīm-ullah during his eleven days' rule, and by the British troops.

The town of Koil has a handsome appearance, the centre being occupied by the lofty site of the old Dor fortress, now crowned by a mosque built early in the eighteenth century, which was repaired during 1898-9 at a cost of more than Rs. 90,000, subscribed by residents in the District. A pillar, erected in 1253 to commemorate the victories of Sultān Nāsir-ud-dīn Mahmūd, was pulled down in 1862. In and about the town are several tombs of Muhammadan saints. Koil contains a general hospital with seventy-nine beds, and a female hospital with eighteen beds; and the Lyall library, opened in 1889, is a handsome building. The civil station has been adorned by a magnificent clock tower and by a fine public hall opened in 1898. The chief want of the city hitherto was a satisfactory drainage scheme, as a large part of it is built on swampy land round the fort, and the excavations from which earth was taken have become insanitary tanks. The outfall drains for sullage have now been completed.

Alīgarh-Koil was constituted a municipality in 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 64,000. In 1903-4 the income was Rs. 95,000, chiefly derived from octroi (Rs. 81,000). Expenditure amounted to a lakh, including general administration (Rs. 9,000), public safety (Rs. 16,000), drainage (Rs. 22,000), and conservancy (Rs. 22,000).

Koil has a considerable export trade in grain, indigo, and

cotton, but it is not so important as Hāthras. It is, however, becoming to some extent a manufacturing centre. The Government postal workshop, which turns out numerous articles required by the department, includes a steam printing press, employing 220 men in 1903. There are three large lock factories, employing more than 300 hands, and a number of smaller concerns. Three cotton gins and one press employed 285 workmen in 1903. The dairy farm at Chherat, a few miles away, was opened by Government, but it is now privately owned and employs about 100 hands. There is also a small manufacture of inferior art pottery, and dried meat is prepared for export to Burma.

The municipality manages three schools and aids two others, attended by 1,000 pupils. The District board maintains the District and *tahsīlī* schools with 287 and 175 pupils respectively, three branch schools with more than 300 pupils, and two girls' schools with 50. Alīgarh is, however, chiefly celebrated for the Muhammadan Anglo-Oriental College. This institution owes its foundation to the labours of the late Sir Saiyid Ahmad Khān, K.C.S.I., to improve the condition of his co-religionists. He founded a society, called the Alīgarh Institute, with the primary purpose of inquiring into the objections felt by the Musalmān community to the ordinary education offered by Government. In 1875 a school was opened, which was attended by fifty-nine boys during the first year. Notwithstanding opposition and apathy, the movement progressed rapidly, and Sir Saiyid ultimately obtained support from all parts of India. The school was affiliated to the Calcutta University up to the First Arts standard in 1878, and up to the B.A. standard in 1881. It was subsequently affiliated to the Allahābād University, which was not founded till 1887. In 1904 there were 353 students in the school, 269 in the college, and 36 in the law classes; 76 of the total number were Hindus. Since the foundation-stone of the permanent buildings was laid in 1877 there have been large extensions. The college now includes five quadrangles of students' quarters, and also hires several houses for students, and it contains a magnificent hall and a hospital. The income and expenditure amount to about a lakh, and the Government grant is Rs. 18,000 annually. Students come from all parts of India, and even from Burma, Somāliland, Persia, Baluchistān, Arabia, Uganda, Mauritius, and Cape Colony. Between 1893 and 1902 the number of degrees in Arts taken by students of the Alīgarh College was 24 per cent.

of the total number conferred on Muhammadans in the whole of India. The Alīgarh Institute society is extinct; but the *Gazette*, which was formerly issued by it, is now issued by the Honorary Secretary to the college.

Atraulī Town.—Head-quarters of the *tahsīl* of the same name in Alīgarh District, United Provinces, situated in 28° 2′ N. and 78° 18′ E., on a metalled road from Alīgarh town. Population (1901), 16,561. The town was founded about the twelfth century, but little is known of its early history. It was a centre of local disaffection during the Mutiny. The Muhammadan inhabitants, who are chiefly descended from converted Hindus, have always had a bad reputation for turbulence; and during the rebellion the town was in the hands of the insurgents from June till September, 1857, when order was restored. The chief public buildings are the *tahsīlī*, which was once a fort, the town hall, dispensary, and school. Atraulī has been a municipality since 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 11,000. In 1903–4 the income was Rs. 17,000, chiefly derived from octroi (Rs. 13,000), and the expenditure was Rs. 17,000. The trade is largely local, and includes grain, sugar, cotton, cloth, and metals. There is one cotton gin, which employed 192 hands in 1903. Four schools are attended by 600 pupils.

Harduāganj.—Town in the District and *tahsīl* of Alīgarh, United Provinces, situated in 27° 56 N. and 78° 12 E., 6 miles east of Alīgarh town. Population (1901), 6,619. Tradition assigns the foundation to Har Deva and Balarāma, brothers of Krishna; but no ancient remains have been found. The Chauhān Rājputs say they settled here when Delhi was taken by the Musalmāns. In the eighteenth century Sābit Khān improved the town considerably. There is a good bazar, lined with brick-built shops, and the town contains a police station, post office, and school. It was formerly a municipality, but is now administered under Act XX of 1856, with an income of Rs. 1,450. The chief imports are salt, timber, and bamboos, and the chief exports cotton and grain. A cotton gin has been set up which employed 106 hands in 1903. The primary school has 90 pupils, and there are two girls' schools with 29.

Hāthras City.—Head-quarters of the *tahsīl* of the same name in Alīgarh District, United Provinces, situated in 27° 36′ N. and 78° 4′ E., on the roads from Muttra to the Ganges and from Agra to Alīgarh, and on the Cawnpore-Achhnerā Railway, and also connected with the East Indian Railway by a short

branch; distance by rail from Calcutta 857 miles, and from Bombay 890 miles. Population is increasing rapidly: (1872) 23,589, (1881) 34,932, (1891) 39,181, and (1901) 42,578. In 1901 Hindus numbered 36,133 and Musalmāns 5,482. After the British annexation in 1803, the *talukdār*, Dayā Rām, a Jāt of the same family as the Rājā of MURSĀN, gave repeated proofs of an insubordinate spirit; and in 1817 the Government was compelled to send an expedition against him under the command of Major-General Marshall. Hāthras was then one of the strongest forts in Upper India, the works having been carefully modelled on the improvements made in the fort at ALĪGARH. After a short siege, terminated by a heavy cannonade, a magazine within the fort blew up and destroyed half the garrison. Dayā Rām himself made his escape under cover of the night, and the remainder of the garrison surrendered at discretion. During the Mutiny the town was kept tranquil by Chaube Ghanshām Dās, a blind pensioned *tahsīldār*, who was afterwards murdered by the rebels at Kāsganj. The town is essentially a trading centre, and the site is crowded. A project for improved drainage is under consideration, and it is also proposed to bring a water-supply from the Māt branch canal. The chief public buildings are the municipal hall and male and female dispensaries. The Church Missionary Society and Methodist Episcopal Mission have branches here.

Hāthras has been a municipality since 1865. The income and expenditure during the ten years ending 1901 averaged Rs. 34,000. In 1903-4 the income was Rs. 66,000, chiefly from octroi (Rs. 53,000), and the expenditure was Rs. 54,000. The municipality also had a closing balance of Rs. 26,000 and Rs. 31,000 invested.

Hāthras was a place of some importance even before British rule, and now it ranks second to Cawnpore among the trading centres of the Doāb. There is a large export trade in both coarse and refined sugar. Grain of all sorts, oilseeds, cotton, and *ghī* form the other staples of outward trade; while the return items comprise iron, metal vessels, European and native cloth, drugs and spices, and miscellaneous wares. The town is becoming a considerable centre for industrial enterprise. It contains six cotton gins and five cotton presses, besides a spinning mill. These factories employed 1,074 hands in 1903. There are two schools with 300 pupils.

Jalālī.—Town in the District and *tahsīl* of Alīgarh, United Provinces, situated in 27° 52′ N. and 78° 16 E., 11 miles south-east of Alīgarh town. Population (1901), 8,830. The chief inhabi-

tants are the Saiyids, Shiahs by sect. They are descendants of one Kamāl-ud-dīn, who settled here about A.D. 1295. This Saiyid family subsequently expelled the old Pathān landholders, and obtained full proprietary rights in the town, which they still possess. The family has supplied many useful subordinate officers to the British Government. The town contains a considerable number of *imāmbāras*, one of which is a handsome building. Jalālī is administered under Act XX of 1856, the income being about Rs. 1,700. There is a primary school with 60 pupils, and the Muhammadans maintain several schools for reading the Korān. The place has little trade.

Pilkhana.—Town in the Sikandra Rao *tahsīl* of Alīgarh District, United Provinces, situated in 27° 51′ N. and 78° 17′ E., 11 miles south-east of Alīgarh town. Population (1901), 5,109. The town is old, and gave its name to a *taluka* farmed to Dayā Rām of Hāthras at the beginning of British rule. It is administered under Act XX of 1856, with an income of about Rs. 1,200. There is a primary school with 60 pupils.

Sikandra Rao Town.—Head-quarters of the *tahsīl* of the same name, in Alīgarh District, United Provinces, situated in 27° 41′ N. and 78° 23′ E., on the grand trunk road and on the Cawnpore-Achhnerā Railway. Population (1901), 11,372. The town was founded in the fifteenth century by Sikandar Lodī, and afterwards given as a *jāgīr* to Rao Khān, an Afghān, from which circumstances the double name is derived. During the Mutiny of 1857, Ghaus Khān, of Sikandra Rao, was one of the leading rebels, and held Koil or Alīgarh as deputy for Walīdād Khān of Mālāgarh in Bulandshahr District. Kundan Singh, a Pundīr Rājput, did good service on the British side, and held the *pargana* as *nāzim*. Sikandra Rao is a squalid, poor-looking town, on a high mound surrounded by low, badly-drained environs. A great swamp spreads eastwards, attaining a length of 4 miles in the rains. There is a mosque dating from Akbar's time, and a ruined house in the town was once the residence of a Muhammadan governor. The public buildings include the *tahsīlī*, dispensary, and school. Sikandra Rao has been a municipality since 1865. During the ten years ending 1901, the income and expenditure averaged Rs. 8,000. The income in 1903–4 was Rs. 13,000, chiefly derived from octroi (Rs. 9,000), and the expenditure was Rs. 14,000. The town is declining, and its trade is chiefly local. There is a small export of glass and saltpetre, which are made in the neighbourhood. The middle school has 220 pupils, and five primary schools 270.

AGRA DIVISION

Agra Division.—A Division in the United Provinces, lying between 26° 22′ and 28° 2′ N. and 77° 17′ and 80° 1′ E., with an area of 10,078 square miles. It is situated in the west of the Provinces, and the greater portion forms the central part of the DOĀB or area between the Jumna and Ganges rivers. On the north lie Alīgarh District in the Meerut Division, and the Punjab District of Gurgaon, while the Ganges forms most of the eastern boundary, dividing the Agra from the Bareilly Division and from Oudh. The southern border meets the Allahābād Division and the States of Gwalior and Dholpur, while the western frontier marches with Bharatpur State. The head-quarters of the Commissioner are at AGRA CITY. The population of the Division has fluctuated considerably, as shown by the figures of the last four enumerations: (1872) 5,039,247, (1881) 4,834,064, (1891) 4,767,375, and (1901) 5,249,542. In 1877–8 the Division suffered from famine, and between 1881 and 1891 from floods. In the last decade the eastern Districts recovered rapidly. The density is 521 persons per square mile, compared with 445 for the Provinces as a whole. The Division is smaller than any other in the Provinces except Gorakhpur, but ranks seventh in population. In 1901 Hindus formed 90 per cent. of the total and Musalmāns 9 per cent., while among the followers of other religions were Jains (28,205), Christians (10,875, of whom 9,847 were natives), and Aryas (10,736). The Division comprises six Districts, as shown below:—

	Area in square miles.	Population, 1901.	Land revenue and cesses for 1903–4, in thousands of rupees.
Muttra	1,445	763,099	17,57
Agra	1,845	1,060,528	19,75
Farrukhābād	1,685	925,812	14,31
Mainpurī	1,675	829,357	14,45
Etāwah	1,691	806,798	15,38
Etah	1,737	863,948	13,76
Total	10,078	5,249,542	95,22

The Districts of Muttra, Agra, and Etāwah lie on both sides of the Jumna, and a small portion of Farrukhābād extends east of the Ganges, while Etah and Mainpurī lie entirely in the Doāb. The Division contains 62 towns and 8,043 villages. The largest towns are AGRA (population, 188,022 with cantonments), FARRUKHĀBĀD (67,338 with Fatehgarh and cantonments), MUTTRA (60,042 with cantonments), ETĀWAH (42,570), and BRINDĀBAN (22,717). The chief places of commercial importance are Agra, Farrukhābād, and Mainpurī. Muttra and Brindāban are important centres of Vaishnava religion, being connected with the life of Krishna, the eighth incarnation of Vishnu. KANAUJ was the chief town of several great dynasties in Northern India before the Muhammadan invasion. Agra was the capital of the Mughal empire during the sixteenth and part of the seventeenth centuries, and successive emperors have left memorials of their rule in stone and marble which are unrivalled throughout India.

Boundaries, configuration, and hill and river systems.

Muttra District (*Mathurā*).—North-western District of the Agra Division, United Provinces, lying between 27° 14′ and 27° 58′ N. and 77° 17′ and 78° 13′ E., with an area of 1,445 square miles. It is bounded on the north by the Punjab District of Gurgaon and by Alīgarh; on the east by Alīgarh and Etah; on the south by Agra; and on the west by the Bharatpur State. Muttra District lies on both sides of the Jumna, which is fringed with ravines. In the centre of the western border the outlying spurs of the Arāvallis penetrate the District, but do not rise more than 200 feet above the plain. Muttra is remarkable for the absence of rivers. Besides the Jumna there are no channels, except the Karon or Karwan which flows across the east of the District, and the Patwai or Patwāhā which joins the Jumna in the Māt *tahsīl*. The Jumna has left a chain of swamps, representing an older channel, east of its present bed. One of these is called Nohjhīl, a shallow marsh, which before it was drained sometimes attained a length of 6 miles in the rains. There is a curious depression in the west of the District, which extends from the Bharatpur and Alwar States, but there is no flow of water.

Geology.

The greater part of the District is the ordinary alluvium of the Gangetic plain, but the western hills are chiefly composed of quartzite. *Kankar* or nodular limestone is common, especially in the Jumna ravines. While the water in many wells is brackish, saline efflorescences are less common than elsewhere in the Doāb.

Botany.

The flora of the western half of the District resembles that

of Rājputāna. Early in the nineteenth century Bishop Heber was struck by the wildness of the country. There are still large stretches of waste land, especially in the Chhāta *tahsīl*, covered with jungle in which the *ber* (*Zizyphus Jujuba*) is the largest tree. Along the canal the *babūl* (*Acacia arabica*) has been largely planted, and the *nīm* (*Melia Azadirachta*) is fairly common, but other trees are scarce[1]. The total area of grove land is less than 9 square miles.

Fauna.

Leopards, wolves, hyenas, and *nīlgai* are found chiefly in the hilly tracts near the Bharatpur border; and wild cattle from the Bharatpur State formerly did much damage, but are now kept out by a continuous fence and ditch. Wild hog are plentiful in the Jumna ravines and *khādar*, and Muttra is celebrated for 'pig-sticking.' Antelope are very common, and the *chinkāra* or 'ravine deer' is also found. In the cold season snipe and duck abound in the swamps and small tanks. Fish are found in the Jumna and in many tanks, but are not much used for food.

Climate and temperature.

The climate is very dry and hot, owing to the proximity of sandy deserts to the west. Great extremes of temperature occur. In January the mean temperature falls to 60°, while in June it rises to over 93°. In winter ice is not uncommonly formed in shallow puddles in the early morning, while in April, May, and June hot winds blow with great force.

Rainfall.

The annual rainfall during the last seventeen years has averaged 26 inches, which is evenly distributed, though the Jumna valley receives slightly more than the portions of the District on either side. Variations from year to year are large; the fall has been less than 16 inches, and has reached nearly 36.

History.

Muttra was the capital of the ancient kingdom of SŪRASENA, and its importance as a religious centre is referred to by Ptolemy, who calls it 'Modoura of the gods.' Arrian and Pliny describe it as Methora. The earliest facts relating to its history are derived from the coins found there, which indicate that Muttra was ruled by a series of Hindu Rājās in the second and first centuries B.C., followed by Saka Satraps, who gradually assume Hindu names. In the first and second centuries A.D., the inscriptions, found in considerable numbers, prove that the sway of the great Kushan kings was recognized here, and Muttra was a great stronghold of the Jains. In the sixth century Hiuen Tsiang found a large city, containing 20 monasteries with 2,000 priests. Muttra was probably one

[1] A list of trees is given in Mr. F. S. Growse's *Mathura* (p. 421).

of the places sacked by Mahmūd of Ghazni in 1018–9, but the District plays little part in the early Muhammadan period, when it was largely held by Mewātīs. While its political history is slight, Muttra is important in the religious history of modern Hinduism. The reformed Vaishnava creeds had their origin in Southern and Eastern India, but in the fifteenth and sixteenth centuries several new sects were founded here, which still influence Hindu thought. The western side of the District is celebrated as the Braj Mandal or country of Krishna, and almost every grove, mound, and tank is associated with some episode in his life. Throughout the year, and especially in the rains, bands of pilgrims from all parts of India may be seen reverently visiting the holy shrines. The increased religious zeal of the Hindus attracted the notice of Shāh Jāhan and Aurangzeb, who took steps to repress it.

As the Mughal empire fell to pieces, the history of the District merges in that of the Jāts of Bharatpur, and only acquires a separate individuality with the rise of Sūraj Mal. In 1712 Badan Singh, father of the famous adventurer, proclaimed himself leader of the Jāts, and took up his residence at Sahār, where he built a handsome palace. In his old age he distributed his possessions among his sons, giving the south-western portion of Bharatpur to his youngest, Pratāp Singh, and the remainder of his dominions, including Muttra, to his eldest, Sūraj Mal. On Badan Singh's death, Sūraj Mal moved to Bharatpur and assumed the title of Rājā. In 1748 the Mughal emperor, Ahmad Shāh, invited the Jāt leader to join with Holkar under the command of Nawāb Safdar Jang in suppressing the Rohilla rebellion. When Safdar Jang revolted (see OUDH), Sūraj Mal and his Jāts threw in their lot with him, while Ghāzī-ud-dīn, the Wazīr, obtained the help of the Marāthās. Safdar Jang retreated to Oudh, whereupon Ghāzī-ud-dīn laid siege to Bharatpur, but, mistrusting his Marāthā allies, shortly returned to Delhi, deposed Ahmad Shāh, and raised Alamgīr II to the throne. When Ahmad Shāh Durrāni invaded India in 1757, Sardār Jahān Khān endeavoured to levy tribute from Muttra; but finding that the people withdrew into their forts, he fell back upon the city, plundered its wealth, and massacred the inhabitants. Two years later the new emperor was murdered, and the Afghān invader once more advanced upon Delhi. Ghāzī-ud-dīn fled to Muttra and Bharatpur, and joined the Hindu confederacy of Marāthās and Jāts which shattered itself in vain against the forces of Ahmad Shāh at Pānīpat in January, 1761. Sūraj Mal, however, withdrew his

forces before the decisive battle, marched on Agra, ejected the Marāthās, and made himself master of the city.

Ahmad Shāh having returned to Afghānīstān, Sūraj Mal thought it a favourable opportunity to attack the Rohilla chief, Najīb-ud-daula. Marching to Shāhdara, 6 miles from Delhi, he was, however, surprised, captured, and put to death in 1763 by a small party of the imperialists. Two of his sons, who succeeded to his command, were successively murdered, and the third, Nawal Singh, after losing Agra during Zābita Khān's rebellion, died in 1776. The fourth son, Ranjīt Singh (not to be confounded with the more famous Sikh Māhārājā), inherited Bharatpur with only an insignificant strip of territory.

During the contest between Sindhia and the Rājput princes in 1788, the former obtained the aid of the Jāts in raising the siege of Agra, then held by Sindhia's forces, and besieged by Ghulām Kādir. In 1803 Ranjīt Singh of Bharatpur joined Lord Lake in his campaign against Sindhia, with a force of 5,000 Jāt horsemen; and upon the defeat of the Marāthās he received as a reward the south-western portion of Muttra, with Kishangarh and Rewārī. But in the following year he gave shelter to Holkar, when a fugitive after the battle of Dīg. This led to the first siege of Bharatpur by Lord Lake, and, although his capital was not taken, Ranjīt Singh lost the territory granted to him in 1803.

Thenceforward Muttra remained free from historical incidents till the Mutiny of 1857. News of the Meerut outbreak reached Muttra on May 14 in that year. Two days later, some Bharatpur troops arrived, and marched for Delhi under British officers. The force halted at Hodal on the 26th; and on the 30th the sepoys sent to escort the treasure from Muttra to Agra proved mutinous, so that the officials were compelled to fly and join the troops at Hodal. Shortly afterwards the Bharatpur force likewise mutinied, and the Europeans fled for their lives. The Magistrate returned to Muttra, and after vainly visiting Agra in search of aid, remained with the friendly Seths (native bankers) till June 14. After the mutiny of the Gwalior Contingent at Alīgarh on July 2, the Nīmach insurgents, marching on Muttra, drove all the Europeans into Agra. The whole eastern portion of the District then rose in rebellion, till October 5, when the Magistrate made an expedition from Agra, and captured the rebel leader, Deokaran. Colonel Cotton's column shortly afterwards proceeded through the District to Kosī, punishing the insurgent villages; and after its return to Agra through Muttra no further disturbances

took place. In the nineteenth century the religious teaching of Muttra affected Dayānand, founder of the Arya Samāj, who studied here for a time.

Archaeology. The town of Muttra and its neighbourhood are rich in archaeological remains, and the exploration of the Jain *stūpa* in the Kankālī *tīla* or mound has yielded valuable dated inscriptions of the Kushan kings[1]. The finest Hindu temples at Muttra were demolished or converted into mosques by the Muhammadans, but some have survived at BRINDĀBAN and MAHĀBAN. There are also fine specimens of the Jāt architecture of the eighteenth century at GOBARDHAN.

The people. Muttra contains 14 towns and 837 villages. Population has hardly yet recovered from the effects of the famine of 1877–8. The number at the four enumerations was: (1872) 782,460, (1881) 671,690, (1891) 713,421, and (1901) 763,099. The District is divided into five *tahsīls*—MUTTRA, CHHĀTA, MĀT, MAHĀBAN, and SADĀBĀD—the head-quarters of each being at a place of the same name. The principal towns are the municipalities of MUTTRA, BRINDĀBAN, and KOSĪ. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Muttra	396	6	218	246,521	623	+ 5·0	17,100
Chhāta	406	2	158	173,756	428	+ 13·2	5,463
Māt	223	..	142	97,370	437	+ 8·9	2,683
Mahāban	240	4	192	136,566	569	+ 2·3	4,934
Sadābād	180	2	127	108,886	605	+ 6·6	2,818
District total	1,445	14	837	763,099	528	+ 7·0	32,998

Of the total, 89 per cent. are Hindus and 10 per cent. Musalmāns. The density of population is higher than the Provincial average, but lower than in the other Doāb Districts. Between 1891 and 1901 the rate of increase was higher than in the Provinces as a whole. About 99 per cent. of the people speak Western Hindī, the prevailing dialect being Braj.

Castes and occupations. The most numerous Hindu caste is that of Chamārs (leather-workers and labourers), 120,000. Brāhmans number 115,000; Jāts, 102,000; and Rājputs, 67,000. The numbers then decrease, and the largest castes are: Korīs (weavers), 17,000; Gadariās (shepherds), 16,000; and Gūjars, 14,000. The Jāts,

[1] *Epigraphia Indica*, vols. i and ii; V. A. Smith, *The Jain Stūpa at Mathurā*.

Gūjars, and Aheriās (14,000) belong to the western Districts; and the Ahivāsīs, who claim to be Brāhmans and number 1,400, are hardly found outside this District. Among Muhammadans, Shaikhs number 13,000; Rajputs, 9,000; and Pathāns, 7,000. The agricultural population forms 53 per cent. of the total, while general labourers form 10 per cent., and those supported by personal services 8 per cent.

Christian missions.

There were 2,031 native Christians in 1901. The earliest mission was that of the Baptists, who commenced work early in the nineteenth century. It was followed in 1860 by the Church Missionary Society, and in 1887 by the American Methodist Church. The last of these has been most successful, and 1,887 of the native Christians in 1901 were Methodists.

General agricultural conditions.

A considerable difference is to be noted between the tracts east and west of the Jumna. The latter is less fertile, and irrigation was difficult before the construction of the Agra Canal, as the subsoil water is often brackish. Hamlets, apart from the main village site, are almost unknown; and this custom, which had its origin in the troubled times when the cultivator ploughed with sword and shield lying in a corner of his field, affects cultivation, as manure is applied only to the home land near the village. On the other hand, Jāts, who are the best cultivators, are chiefly found west of the Jumna, and the eastern *tahsīls* are plagued by a weed called *baisurī* (*Pluchea lanceolata*). Besides the barren land bordering on the Jumna ravine, there is a strip of sandy soil along the foot of the hills on the western border.

Chief agricultural statistics and principal crops.

The tenures are those commonly found in the Provinces. In 1883, out of 1,375 *mahāls* 478 were *zamīndāri*, 492 *pattīdāri* and imperfect *pattīdāri*, and 505 *bhaiyāchārā*. West of the Jumna some villages belong to *talukdāri* estates, chiefly to Mursān. The main agricultural statistics for 1903-4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Muttra	396	297	117	53
Chhāta	406	329	113	44
Māt	223	170	53	30
Mahāban	240	195	47	20
Sadābād	180	154	59	8
Total	1,445	1,145	389	155

The chief food-crops are *jowār* and barley, which occupied

268 and 205 square miles respectively, or 23 and 18 per cent. of the net area cropped. Gram (193), wheat (153), and *bājra* (93) are also important, while cotton covered an area of 131 square miles. The small area under specially valuable crops—sugar-cane, tobacco, and vegetables—is striking.

Improvements in agricultural practice.

There have been no improvements of recent years either in methods or in the introduction of new seed. The principal change has been the substitution of wheat for cotton, largely owing to the extension of canals. A small but steady demand exists for loans under the Land Improvement and Agriculturists' Loans Acts, which amounted to Rs. 96,000 and Rs. 1,16,000 during the ten years ending 1900; but advances in the famine year 1896-7 account for Rs. 48,000 and Rs. 39,000 respectively. In 1903-4 the loans were only Rs. 1,500 and Rs. 1,065. With the extension of canal-irrigation, drainage has also been improved, especially in the Chhāta *tahsīl*, and the Patwai or Patwāhā in Māt has been deepened. Private enterprise has drained the lake known as Nohjhīl, while a few miles south of Muttra a dam has been built by the *zamīndārs* near Koela to keep out the Jumna.

Cattle, horses, and sheep.

The Jumna ravines and the *khādar* provide ample grazing-ground, but there is no indigenous breed of cattle. Kosī is a great cattle mart, at which animals are sold which have been imported from the Punjab or Bharatpur State. Horse and mule-breeding are becoming popular, and three horse and two donkey stallions have been provided by Government. The sheep are of the ordinary type.

Irrigation.

In 1903-4 the area irrigated was 389 square miles, out of a cultivated area of 1,145 square miles. Canals supplied 201 square miles, and wells 188. The western division of the District is amply served by the Agra Canal and its distributaries. Up to 1903 the eastern portion had no canal-irrigation except in a few villages of the Māt *tahsīl*; but the Māt branch of the Upper Ganges Canal now supplies every portion, irrigating 25,000 acres in the spring of 1904 and more than 20,000 in the autumn. Tanks and rivers are not used at all for irrigation, and the use of the former is forbidden by the religious sanctity attaching to most of them.

Minerals.

Sandstone is obtainable from the low hills in the Chhāta *tahsīl*, but most of the stone used in the District is obtained from Agra or Bharatpur. The Giri Rāj, which is of sandstone, is considered so holy that to quarry it would be sacrilege. *Kankar* is found in all parts, and occurs in block form in the Sadābād *tahsīl*.

The manufactures of the District are not very important. Calico printing is carried on at Brindāban, and old flannel is skilfully repaired. The masons and stone-carvers of Muttra are justly celebrated, and many houses and temples are adorned with the graceful reticulated patterns which they produce. A special paper used for native account-books is made here, and the District is noted for the quaint silver models of animals produced at Gokul. In 1903 there were 10 cotton gins and presses, employing about 970 hands. A few small indigo factories are still worked, but the industry is not thriving. Arts and manufactures.

Grain and cotton are the chief exports, and the imports include sugar, metals, oilseeds, and piece-goods, most of the trade being with Hāthras. Muttra city is an important dépôt for through traffic. Thus cotton and oilseeds from Bharatpur State pass through here to Hāthras, while sugar, salt, and metals are returned. Kosī, in the north of the District, is a great cattle market, where the peasants of the Upper Doāb purchase the plough-animals brought from Rājputāna or the Punjab. Commerce.

The East Indian Railway runs for 7 miles across the east of the District, with one station. The narrow-gauge Cawnpore-Achhnerā line enters the District at the centre of the eastern boundary, crosses the Jumna, and then turns south. It provides communication with Hāthras on the east and Agra on the south, and from Muttra city a short branch serves the pilgrim traffic to Brindāban. An extension of the Midland section of the Great Indian Peninsula Railway from Agra to Delhi, passing through Muttra, was opened in 1905. Railways and roads.

The District is well supplied with roads. Out of 500 miles, 171 are metalled and 329 unmetalled. Excluding 57 miles of metalled roads, all of these are kept up at the cost of Local funds. Avenues of trees are maintained on 31 miles. The main route is that from Agra to Delhi, a famous road under native rule, which traverses the western half of the District from south to north. Other roads pass from Muttra west to Dīg and Bharatpur, east through Hāthras to the Ganges, and south-east to Jalesar and Etah. The Agra Canal was used for navigation, but has been closed for this purpose since 1904.

Though precise records do not exist, famine must have been frequent before British rule began, and the awful disaster of 1783-4 was especially severe in this tract. In 1813 the north of the District was a centre of great distress. Many persons perished of hunger, or sold their wives and children for a few Famine.

rupees or a single meal. In 1825–6 a terrible drought affecting the neighbouring country was especially felt in the Mahāban *tahsīl*. In 1837–8 there was scarcity in all parts of the District, but it was not so severe as in the Central Doāb; and in 1860–1 and 1868–9 Muttra again suffered less than other Districts, though distress was felt. The famine of 1877–8 struck this tract more heavily than any other District in the Division, and mortality rose to 71·56 per 1,000. The monsoon fall in 1877 was only 4·3 inches, and the deficiency chiefly affected the main food-crops which are raised on unirrigated land. As usual, distress was aggravated by an influx of starving people from Rājputāna. In 1896–7 famine was again felt, especially in the Mahāban and Sadābād *tahsīls*, which had no canal-irrigation. In June, 1897, the number on relief works amounted to 23,000. About Rs. 86,000 was advanced for the construction of temporary wells, chiefly east of the Jumna, and 1·8 lakhs of revenue was remitted or suspended. There was scarcity in 1899–1900, and advances were freely made, but relief works were not found necessary. The canal extensions of 1903 have probably secured the District against serious famine in the future.

District staff. The ordinary staff of the District includes a member of the Indian Civil Service and three Deputy-Collectors recruited in India. A *tahsīldār* resides at the head-quarters of each of the five *tahsīls*. Two Executive Engineers of the Canal department are stationed at Muttra.

Civil justice and crime. Muttra is included in the Civil and Sessions Judgeship of Agra. There are two Munsifs, one at Muttra and one at Mahāban. Owing to its situation near a Native State, serious dacoities are not infrequent, and cattle-theft is common. Jāts, and in some places Gūjars, are the chief cattle-lifters; and *langūrī* is regularly practised, a system by which the owner recovers his stolen property on payment of a certain proportion of its value. The Mallāhs (boatmen and fishermen) of the north of the District are noted pickpockets and railway-thieves, frequenting all the large fairs of the United Provinces, and even visiting Bengal.

Land revenue administration. Most of the District came under British administration at the end of 1803, and was then distributed between the surrounding Districts of Farrukhābād, Etāwah, and Agra. In 1804 the *parganas* included in Farrukhābād and Etāwah were made over to Alīgarh; but in 1823 the nucleus of the eastern part of the District was formed with head-quarters at Sadābād, and in 1832 Muttra, which had always been a cantonment,

became the civil capital. There are still enclaves belonging to Bharatpur State, the Rājā of which held part of the present District up to 1826. The early settlements were made under the ordinary rules for short periods of one, three, or five years, and were based on estimates. In the western part of the District the farming and *talukdāri* system was maintained for some time as in Alīgarh, and was even extended, as *talukdāri* rights were sometimes granted in lieu of farms. In the eastern portion farmers and *talukdārs* were set aside from the first. The first regular settlement under Regulation VII of 1822 was made on different principles. West of the river an attempt was made to ascertain the rental 'assets,' while in the east the value of the crops was estimated. The former settlement was not completed when Regulation IX of 1833 was passed, and the latter broke down from the excessive demand imposed. The revenue of the whole District (excluding eighty-four villages transferred from Agra in 1878) was therefore revised under Regulation IX of 1833, and an assessment of 13·6 lakhs fixed. The next settlement was made between 1872 and 1879. The method adopted was to assess on what were considered fair rents, arrived at by selection from actual rents paid. These were applied to the different classes of soil into which each village was divided. The revenue sanctioned amounted to 15·3 lakhs, to which must be added 1 lakh, the revenue of villages transferred from Agra in 1878. The incidence of revenue fell at Rs. 1-13-0 per acre, varying from Rs. 1-4-0 to Rs. 2-14-0. The bad years following the famine of 1877-8 and the fever of 1879 led to a decline in cultivation; and revisions of settlement were made between 1887 and 1891, which reduced the demand by a lakh. The settlement has now been extended for a further period of ten years. Collections on account of land revenue and revenue from all sources are shown below, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	15,95	15,08	15,41	14,90
Total revenue . .	19,73	20,72	21,66	21,22

Outside the three municipalities, MUTTRA, BRINDĀBAN, and KOSĪ, and eleven towns administered under Act XX of 1856, local affairs are managed by the District board, which has a total income and expenditure of about 1·3 lakhs, chiefly derived from rates. About half the expenditure is incurred on the maintenance of roads and buildings. Local self-government.

Police and jails. There are 24 police stations, and the District Superintendent of police is assisted by 4 inspectors. In 1904 the force consisted of 91 subordinate officers and 392 constables, besides 320 municipal and town police, and 1,640 rural and road police. The District jail has accommodation for 318 prisoners.

Education. Muttra takes a fairly high place in the Provinces in regard to literacy, and 4·3 per cent. of the population (7·8 males and 0·3 females) could read and write in 1901. This is largely owing to its importance as a religious centre. The number of public schools fell from 165 in 1880–1 to 132 in 1900–1, but the number of pupils increased from 5,505 to 6,511. In 1903–4 there were 197 public schools with 8,981 pupils, including 478 girls, besides 82 private institutions with 1,781 pupils. All of these schools were primary, except nine of the public and two of the private schools. The expenditure on education in 1903–4 was Rs. 43,000, of which Rs. 31,000 was provided from Local and municipal funds and Rs. 8,300 by fees. Most of the schools are managed by the District and municipal boards.

Hospitals and dispensaries. There are eight hospitals and dispensaries, which contain accommodation for 77 in-patients. In 1903 the number of cases treated was 58,000, of whom 995 were in-patients, and 3,600 operations were performed. The total expenditure was Rs. 16,000, chiefly from Local funds.

Vaccination. In 1903–4 the number of persons vaccinated was 24,000, representing 31 per 1,000 of population. Vaccination is compulsory only in the municipalities and the cantonment.

[R. S. Whiteway, *Settlement Report* (1879); F. S. Growse, *Mathurā* (Allahābād, 1883); *District Gazetteer* (1884, under revision); V. A. Smith, *The Jain Stūpa at Mathurā.*]

Muttra Tahsīl.—South-western *tahsīl* of Muttra District, United Provinces, conterminous with the *pargana* of Muttra, lying between 27° 14′ and 27° 39′ N. and 77° 20′ and 77° 51′ E., with an area of 396 square miles. Population rose from 234,914 in 1891 to 246,521 in 1901. There are 218 villages and six towns, the largest of which are MUTTRA (population, 60,042), the District and *tahsīl* head-quarters, BRINDĀBAN (22,717), and GOBARDHAN (6,738). The demand for land revenue in 1903–4 was Rs. 2,94,000, and for cesses Rs. 55,000. The density of population, 623 persons per square mile, is the highest in the District. The *tahsīl* extends from the Jumna to the low hills on the Bharatpur border, and contains the celebrated hill called Giri Rāj. To the east the influence of the Jumna extends for three miles inland, low alluvial

soil, ravines, and sandy dunes being found along its banks. From the edge of this broken ground a flat uniform plain stretches to the hills, without a single stream. The principal autumn crops are *jowār*, cotton, and *bājra*; the spring crops are gram and wheat. In 1903-4 the area under cultivation was 297 square miles, of which 117 were irrigated. The Agra Canal supplies an area twice as large as that served by wells.

Chhāta Tahsīl.—North-western *tahsīl* of Muttra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 33′ and 27° 56′ N. and 77° 17′ and 77° 42′ E., with an area of 406 square miles. Population rose from 153,465 in 1891 to 173,756 in 1901. There are 158 villages and two towns, Kosī (population, 9,565) and CHHĀTA (8,287), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 3,38,000, and for cesses Rs. 59,000. The density of population, 428 persons per square mile, is the lowest in the District. Up to 1894 the northern portion formed a separate *tahsīl* called Kosī. The *tahsīl* is bounded on the east by the Jumna, which is fringed with ravines and a sandy strip of land; but these are not so extensive as in the Muttra *tahsīl* to the south. A ridge of sand traverses the centre, and another narrow belt is found farther west, beyond which is a shallow depression not sufficiently marked to form a drainage channel. The western boundary is formed by the Bharatpur State, and in places low stone hills are found. In the north the wells are very deep and the water they contain is usually brackish. The autumn harvest is more important here than the spring harvest, and *jowār* is the most common staple. In 1903-4 the area under cultivation was 329 square miles, of which 113 were irrigated. The Agra Canal supplies a rather larger area than wells. A drain has recently been completed from a depression near Kosī to the Jumna.

Māt Tahsīl (*Mānt*).—North-eastern *tahsīl* of Muttra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 35′ and 27° 58′ N. and 77° 31′ and 77° 50′ E., with an area of 223 square miles. Population rose from 89,451 in 1891 to 97,370 in 1901. There are 142 villages, but no town. In 1903-4 the demand for land revenue was Rs. 2,65,000, and for cesses Rs. 43,000. The density of population, 437 persons per square mile, is much below the District average. The Jumna forms the western boundary of the *tahsīl*, and parallel to its course lie a series of depressions marking an old bed. Nohjhīl, the most

northern of these, was formerly a lake 6 miles long by a mile broad, but it has been drained. The Motī *jhīl* in the south, which is smaller, still contains water, and is celebrated for the number of fish caught in it. A small stream called the Patwāhā is used as a canal escape. Light and sandy soil prevails in the *tahsīl*, which forms a long strip of land stretching along the Jumna, the valley being narrow and badly defined. Up to 1903 canal-irrigation was confined to very few villages, and in 1903-4 only 53 square miles were irrigated (chiefly by wells), out of a cultivated area of 170 square miles. The new Māt branch of the Upper Ganges Canal now commands a considerable area.

Mahāban Tahsīl.—Central eastern *tahsīl* of Muttra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 14′ and 27° 41′ N. and 77° 41′ and 77° 57′ E., with an area of 240 square miles. Population rose from 133,488 in 1891 to 136,566 in 1901. There are 192 villages and four towns, the largest of which is MAHĀBAN (population, 5,523), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 2,95,000, and for cesses Rs. 52,000. The density of population, 569 persons per square mile, is slightly above the District average. On the west and south the Jumna flows in a sinuous course, bordered by a strip of sandy ravine land, 1 to 3 miles wide, of no value except as grazing-ground. East of this the land is generally fertile, but up to 1903 irrigation was entirely supplied by wells, which irrigated 47 square miles in 1903-4 out of 195 under cultivation. Most of the *tahsīl* is now commanded by the Māt branch of the Upper Ganges Canal, opened in November, 1903. Cultivation has suffered from the spread of a weed called *baisurī*, which flourishes in dry seasons. The most important crops are *jowār* and cotton in the autumn, and mixed barley and gram and pure wheat in the spring.

Sadābād Tahsīl.—Easternmost *tahsīl* of Muttra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 16′ and 27° 31′ N. and 77° 53′ and 78° 13′ E., with an area of 180 square miles. Population rose from 102,103 in 1891 to 108,886 in 1901. There are 127 villages and two towns, including Sadābād (population, 4,091), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 3,07,000, and for cesses Rs. 49,000. The density of population, 605 persons per square mile, is considerably above the District average. A small river, the Karon or Jhirnā, crosses the centre of the *tahsīl*, and its

channel has been improved by the Irrigation department to serve as an escape. The Jumna just touches the south-western corner. In 1903-4 the area under cultivation was 154 square miles, of which 59 were irrigated. The latter were supplied entirely from wells; but in November, 1903, the Māt branch of the Upper Ganges Canal was opened, which commands the western half of the *tahsīl*. Cotton is relatively a more important crop than in any other part of the District.

Baldeo.—Town in the Mahāban *tahsīl* of Muttra District, United Provinces, situated in 27° 24′ N. and 77° 49′ E., on the metalled road from Muttra city to Jalesar. Population (1901), 3,367. It is generally known in the neighbourhood as Daujī, and derives its importance from a celebrated temple. A shrine was first erected in the seventeenth century, when a statue of Baldeo was found in a tank. The present temple was built late in the eighteenth century. It is of mean appearance, and is surrounded by a number of quadrangles where the resident priests and pilgrims are accommodated. The temple is in charge of a peculiar caste called Ahivāsī Brāhmans, found only in this neighbourhood. Baldeo is administered under Act XX of 1856, with an annual income of about Rs. 1,100. There is a primary school with about 120 pupils.

Barsāna.—Town in the Chhāta *tahsīl* of Muttra District, United Provinces, situated in 27° 39′ N. and 77° 23′ E., 31 miles north-west of Muttra city. Population (1901), 3,542. According to modern Hindu belief, this was one of the favourite residences of Krishna's mistress, Rādhā. It lies at the foot and on the slope of a hill originally dedicated to Brahmā. The hill has four peaks, each crowned with buildings erected at intervals during the eighteenth and nineteenth centuries; and the importance of the place dates from the settlement here of a Brāhman who had been family priest to the Rājās of Bharatpur, Gwalior, and Indore early in the eighteenth century. In 1774 the Jāts under Sumrū were defeated near Barsāna by the imperial troops, who plundered the town. A magnificent new temple is being built by the Mahārājā of Jaipur.

Brindāban (from *brindā*, *Ocymum sanctum*, and *ban*, 'a grove').—Town in the District and *tahsīl* of Muttra, United Provinces, situated in 27° 33′ N. and 77° 42′ E., near the Jumna, and connected by a metalled road and the branch line of the Cawnpore-Achhnerā Railway with Muttra city. Population (1901), 22,717, of whom only 1,409 are Muhammadans. The

town has no political history, but according to tradition was the place where Krishna passed most of his youth and where his mistress, Rādhā, loved to dwell. It is visited annually by thousands of Hindu pilgrims from the most distant parts of India. It contains about 1,000 temples, and the peacocks and monkeys with which the neighbourhood abounds enjoy special endowments. The town itself dates from the sixteenth century, when several holy men from different parts of India settled here, and four of the existing temples were built about that time. The finest of these is the temple of Govind Deva, built in 1590 by Rājā Mān Singh of Amber (Jaipur), a magnificent building of red sandstone, cruciform, with a vaulted roof. It has been restored by the British Government. The development of various Vaishnava cults connected with the worship of Krishna has caused the growth of the place. Some large temples were erected in the nineteenth century, one of which was built on the model of Southern Indian temples, at a cost of 45 lakhs, by the great banking firm or Seths of Muttra. Another large temple is still under construction by the Mahārājā of Jaipur. The town lies some distance from the Jumna, surrounded by sacred groves of trees, most of which contain shrines. The river face has been improved by handsome *ghāts* of stone steps. There are branches of the Church Missionary Society and the American Methodist Mission; and the latter society maintains a dispensary, apart from the District board dispensary.

Brindāban has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 24,000. In 1903–4 the income was Rs. 26,000, chiefly from octroi (Rs. 19,000), and the expenditure was Rs. 28,000. There is a considerable industry in calico printing, and second-hand flannel is largely imported from Mārwār and Bīkaner to be renovated. The town, however, depends on the pilgrim traffic for its prosperity. There are two municipal and four aided schools for boys with 296 pupils in 1904, besides a small girls' school maintained by the American Methodist Mission.

Chhāta Town.—Head-quarters of the *tahsīl* of the same name in Muttra District, United Provinces, situated in 27° 44′ N. and 77° 31′ E., on the Agra-Delhi road. Population (1901), 8,287. The principal feature of the town is its large fort-like *sarai*, covering an area of 12 acres, with battlemented walls and bastions, and two lofty gateways of decorated stonework, dating from the time of Sher Shāh or Akbar. The interior is disfigured by a number of mean mud huts. During the Mutiny

of 1857 the *sarai* was occupied by the rebels, who, however, had to blow one of the towers down before they could effect an entrance. The town is administered under Act XX of 1856, with an income of about Rs. 1,200. Trade is chiefly local. There is a primary school with about 80 pupils.

Giri Rāj ('The royal hill'; called Annakūt in early Sanskrit literature).—A sandstone hill, about 4 or 5 miles long, near the town of GOBARDHAN, in Muttra District, United Provinces, between 27° 28′ and 27° 31′ N. and 77° 26′ and 77° 29′ E. The rock rises abruptly from the alluvial plain, and runs north-east and south-west with an average elevation of 100 feet. On the north, it ends in the Mānasī Gangā tank at Gobardhan. According to Hindu fable, Indra, enraged at being deprived of his usual sacrifices, caused violent storms to pour down on the people of Braj, who were protected by Krishna by means of this hill, which he held aloft on the tip of his finger for seven days and nights. Pious pilgrims may still be seen measuring their length in the dust the whole way round it, while the hill is reckoned so holy that the main road, which crosses it at its lowest point, is carried over by a paved causeway.

Gobardhan.—Town in the *tahsīl* and District of Muttra, United Provinces, situated in 27° 30′ N. and 77° 28′ E., on the road from Muttra city to Dīg (Bharatpur State). Population (1901), 6,738. It lies in a recess in the sacred hill called GIRI RĀJ, and is built round a fine tank lined with masonry steps, called the Mānasī Gangā. At the Dewāli festival in autumn the steps and façade of the surrounding buildings are outlined with rows of small lamps, producing a beautiful effect. Gobardhan is famous in tradition as one of the favourite residences of Krishna, and is also remarkable for its architectural remains. The oldest is the temple of Hari Deva, originally built about 1560 and restored by a Baniā in 1872. Two stately cenotaphs of richly carved stone commemorate Randhīr Singh and Baldeo Singh, Rājās of Bharatpur, and are crowned by domes, the interiors of which are adorned with curious paintings. A third cenotaph is being constructed in memory of Rājā Jaswant Singh. North of the town, on the bank of the beautiful artificial lake called Kusum Sarovar, stands a group of buildings built in memory of Sūraj Mal by his son, Jawāhir Singh, soon after Sūraj Mal's death near Ghāziābād in 1763. Gobardhan is administered under Act XX of 1856, with an income of about Rs. 2,200. There is little or no trade. The primary school has about 140 pupils.

Kosī.—Town in the Chhāta *tahsīl* of Muttra District,

United Provinces, situated in 27° 48′ N. and 77° 26′ E., on the Agra-Delhi road. Population (1901), 9,565. The town contains a fine *sarai* ascribed to Khwāja Itibār Khān, governor under Akbar. During the Mutiny the District officials took refuge at Kosī for a time, but were compelled to flee by the defection of the Bharatpur force. There is a dispensary, and the Baptist Mission has a station here. The town lies low, and is surrounded by hollows containing stagnant water which had most injurious effects on the health of the inhabitants. A main drain has now been constructed. Kosī became a municipality in 1867. During the ten years ending 1901 the income and expenditure averaged Rs. 12,000. In 1903–4 the income was Rs. 17,000, chiefly derived from octroi (Rs. 8,000) and rents (Rs. 3,000); and the expenditure was Rs. 23,000. The municipality has Rs. 10,000 invested. There is a considerable trade in the collection of grain and cotton for export to Muttra, and six cotton gins and presses employed 580 hands in 1903. Kosī is, however, chiefly known for its large cattle market, one of the most important in this part of India, where more than 30,000 head of cattle are sold annually. There are four schools with about 240 pupils.

Mahāban Town.—Head-quarters of the *tahsīl* of the same name in Muttra District, United Provinces, situated in 27° 27′ N. and 77° 45′ E., near the left bank of the Jumna. Population (1901), 5,523. According to tradition, Krishna spent his childhood at Mahāban. The legend goes that his uncle Kans, a giant, knew by prophecy that his sister's son would slay him, and commanded that if she brought forth a male child it should at once be killed. The nurse, however, fled with the baby, and though the Jumna was in flood, the waters parted, and the fugitives reached Mahāban. A covered court divided into four aisles by five rows of sixteen richly decorated pillars, from which it takes its popular name of *Assī Khamba*, or the 'eighty pillars,' is said to have been the palace of Nanda, who adopted Krishna, and gave up his own female child. The building was, however, reconstructed in the time of Aurangzeb, from ancient Hindu and Buddhist materials, to serve as a mosque. Its architecture presents interesting features, which have been discussed by the late Mr. F. S. Growse[1]. Krishna's reputed cradle, a coarse structure, covered with calico and tinsel, still stands in the pillared hall, while a dark blue image of the sacred child looks out from a canopy against the wall. The churn from which he stole his foster-mother's butter is shown, consisting of

[1] *Mathurā* (1883), p. 274.

a carved stone in which a long bamboo is placed, while a spot in the wall is shown as the place where the sportive milkmaids hid Krishna's flute. In addition to the steady stream of devotees from all parts of India, the pillared hall is resorted to by Hindu mothers from the neighbouring Districts for their purification on the sixth day after childbirth, whence the building derives its local name of the Chhatthī Pālnā, or place of the Chhatthī Pūjā, i.e. 'the sixth day of worship.'

Mahāban first emerges into history in 1018–9, when it shared the fate of the neighbouring city of Muttra, and was sacked by Mahmūd of Ghazni. The Hindu prince is said, when the fall of the town became inevitable, to have solemnly slain his wife and children, and then to have committed suicide. An inscription found here records the erection of a temple in 1151 in the reign of Ajayapāla, whose dynasty is uncertain[1]. In 1234 a contemporary writer mentions Mahāban as one of the gathering-places of the imperial army sent by Shams-ud-dīn against Kālinjar. It is incidentally referred to by the emperor Bābar in 1526. In 1804 Jaswant Rao Holkar fled from the Doāb, after his defeat at Farrukhābād, by a ford a little west of Mahāban. A mile away lies the small village of Gokul, celebrated as the residence of the founder of the Vallabhāchārya sect, and still the head-quarters of the sect. Mahāban is administered under Act XX of 1856, with an income of about Rs. 1,000. It contains a middle school with about 130 pupils, and at Gokul there is a primary school with 80 pupils.

Muttra City.—Head-quarters of the District of the same name, with cantonments, in the United Provinces, situated in 27° 30′ N. and 77° 41′ E., on the right bank of the Jumna, on the main road from Agra to Delhi, and on the Cawnpore-Achhnerā Railway, 886 miles from Calcutta and 914 from Bombay. A new broad-gauge line from Agra to Delhi, passing through Muttra, has recently been completed, and another towards Bombay is under construction. Population has fluctuated in the last thirty years: (1872) 59,281, (1881) 57,724, (1891) 61,195, and (1901) 60,042. In 1901 Hindus numbered 46,523, and Musalmāns 12,598.

The city of Muttra is one of the great centres of Hindu religious life, being famous as the birthplace of Krishna, who is now reverenced as the eighth incarnation of Vishnu. Its early history has been narrated in that of MUTTRA DISTRICT. Inscriptions and other relics prove that early in the Christian era it was a great centre of Buddhism and Jainism, and in the seventh

[1] *Epigraphia Indica*, vol. ii, p. 275.

century the Chinese pilgrim still found Buddhist priests and monasteries. The Persian historians chiefly refer to it as a town to be plundered, or as a seat of idolatry with buildings to be destroyed. A town called Mahārat-ul-Hind, identified as Muttra, was sacked by Mahmūd of Ghazni in 1018–9. About 1500 Sultān Sikandar Lodī utterly destroyed all the shrines, temples, and images. During Akbar's reign religious tolerance led to the building of new temples; but in 1636 Shāh Jahān appointed a governor to 'stamp out idolatry' in Muttra. In 1669–70 Aurangzeb visited the city, changed its name to Islām-ābād, and destroyed many temples and shrines, building mosques on two of the finest sites. Muttra was again plundered by the Afghān cavalry of Ahmad Shāh Durrāni in 1757, when a crowd of defenceless pilgrims were slaughtered. The town fell into British hands in 1803 and was at once occupied as a cantonment, but did not become the civil head-quarters of the District till 1832. Archaeological remains of the greatest value have been discovered in and near Muttra[1].

The native city lies along the Jumna, presenting a highly picturesque appearance from the railway bridge or the opposite bank. From the water's edge rises a continuous line of stone *ghāts*, thronged in the early morning by crowds of bathers. Fine stone houses and temples line the narrow road which passes along the *ghāts*; and above these are seen, tier upon tier, the flat-roofed houses of the town, which stand on ground rising up from the river bank. At the north end is the old ruined fort where was situated one of the observatories erected by Rājā Mān Singh of Jaipur, which has now disappeared. In the centre the white minarets of the Jāma Masjid, built in 1662, crown the picture. The main streets are wider and straighter than is usual in an Indian city, and they are paved continuously with stone flags, raised in the centre to secure good drainage. The numerous temples for which the city is noted are usually quadrangles, the walls and entrances of which are adorned with handsome stone carving and reticulated screens. The existing buildings are chiefly modern, and new temples and *dharmsālas* or shelters for pilgrims are still being added by wealthy bankers and the rulers of Native States. West of the city stands the mosque of Aurangzeb, built about 1669, on the lofty site of the temple of Kesava Deva, which was formerly the finest temple in Muttra and was celebrated throughout India. On the *ghāts* towers the Satī *burj* or pillar commemorating the *satī* of a Rānī of Jaipur, built about 1570. The Hardinge Gate

[1] *Epigraphia Indica*, vols. i and ii; V. A. Smith, *The Jain Stūpa at Mathurā*.

at the principal entrance to the town, which is a fine specimen of stone carving, was erected by public subscription in memory of a former Collector. South of the town and a little distance from the river lie the cantonments and civil station. Muttra is the head-quarters of the ordinary District staff and also of an Executive Engineer of the Agra Canal. Close to the District offices stands a museum faced with stone, carved in the usual manner, which contains a number of sculptures and other objects found in the District. Muttra is the chief station of the Baptist Church Missionary Society and of the Methodist Episcopal Mission in the District.

Muttra was constituted a municipality in 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 61,000. In 1903-4 the income was Rs. 89,000, chiefly derived from octroi (Rs. 64,000); and the expenditure was Rs. 81,000. The sewage of the city is collected in tanks and carried by carts to a distance. Solid matter is trenched on the grass farm in cantonments.

While the prosperity of the town chiefly depends on its religious attractions, its commercial importance is increasing. Throughout the nineteenth century it was the head-quarters of the great banking firm of the Seths, Mani Rām and Lakshmī Chand, one of the most celebrated in India, which has now collapsed. Four cotton gins and presses employed 392 hands in 1903, and there is a considerable export of cotton and grain, while sugar, piece-goods, and metals are imported. The city is noted for the production of paper for native account-books, and also for the manufacture of brass idols and other small articles sold to pilgrims. It contains a large number of schools, including a high school with 170 pupils, a *tahsīlī* school with 150, the American Methodist school with 140, besides seven schools for boys and eleven for girls, aided by the District or municipal boards, and twenty private schools and *pāthsālas*.

The population of the cantonments in 1901 was 2,928, and the ordinary garrison consists of a regiment of British cavalry. In 1903-4 the income and expenditure of cantonment funds were both about Rs. 7,000.

Boundaries, configuration, and hill and river systems.

Agra District.—District in the Division of the same name, in the United Provinces, lying between 26° 45′ and 27° 24′ N. and 77° 26′ and 78° 51′ E., with an area of 1,845 square miles. It is bounded on the north by Muttra and Etah, and on the east by Mainpurī and Etāwah; on the south lie the Native States of Gwalior and Dholpur, and on the west Bharatpur. The District is divided into four distinct tracts by the rivers

Jumna, Utangan or Bāngangā, and Chambal. North-east of the Jumna, which crosses the District with a very winding course from north-west to south-east, lie two *tahsīls* with an upland area of productive loam, separated from the river by a network of ravines which are of little use except for grazing. Three smaller streams, the Jhirnā (or Karon), Sirsā, and Sengar, cross this tract. The greater part of the District lies south-west of the Jumna and north of its tributary the Utangan. This tract is remarkable for the uniformity of its soil, which is generally a fertile loam, with little clay or sand. The ravines of the two great rivers, and of the Khārī Nadī, which flows into the Utangan, are the chief breaks, while in the west of Fatehpur Sīkri a few ranges of low rocky hills appear. South of the Utangan lie two smaller tracts of markedly different appearance. In the south-west a low range and numerous isolated hills are found, and the country is traversed by many watercourses. The south-east of the District consists of a long strip of land, wider in the centre than at the ends, lying between the Utangan and Jumna on the north, and the Chambal on the south. Half of this area is occupied by the deep and far-spreading ravines of the rivers.

Geology. The District is almost entirely occupied by the Gangetic alluvium, which conceals all the older rocks, except in the west and south-west, where ridges of Upper Vindhyan sandstone rise out of the plain. Several divisions appear to be represented, from the lowest, known as the Kaimur group, to the highest, known as the Bhānder. A boring at Agra was carried to a depth of 513 feet before striking the underlying rock.

Botany. The flora is that of the Doāb north of the Jumna, while south of the great river it resembles that of Rājputāna. The former area is fairly well wooded, while in the latter trees are scarce.

Fauna. Leopards and hyenas are found in the ravines and in the western hills, while wolves are common near the Jumna, and 'ravine deer' (gazelle) frequent the same haunts. Antelope are to be seen in most parts of the District. Fish are plentiful in the rivers and are eaten by many classes.

Climate and temperature. Owing to its proximity to the sandy deserts on the west, Agra District is very dry, and suffers from greater extremes of temperature than the country farther east. Though cold in winter, and exceedingly hot in summer, the climate is not unhealthy. The mean annual temperature is about 75°; the lowest monthly average being about 59° in January, and the highest 95° or 96° in May and June.

The annual rainfall averages about 26 inches. There is not much variation in different parts, but the tract near the Jumna receives the largest fall. Great variations occur from year to year, the amount ranging from 11 to 36 inches. Rainfall.

The District of Agra has scarcely any history, apart from the city. Sikandar Lodī, king of Delhi, had a residence on the left bank of the Jumna, which became the capital of the empire about 1501. It was occupied by Bābar after his victory over Ibrāhīm Khān in 1526, and its foundations are still to be seen opposite the modern Agra. Bābar fought a decisive battle with the Rājputs near Fatehpur Sīkri in 1527. His son, Humāyūn, also resided at Old Agra, until his expulsion in 1540. Akbar lived in the District for the greater part of his reign, and founded the present city of Agra on the right bank. The town of Fatehpur Sīkri, which owes its origin to the same emperor, dates from 1569 or 1570. A tank of 20 miles in circumference, which he constructed in its neighbourhood, can now be traced in the fragmentary ruins of the embankment. The mausoleum at Sikandra, 5 miles from Agra, marks the burial-place of the great Mughal emperor. It was built by his son, Jahāngīr, and has a fine entrance archway of red sandstone. Jahāngīr, however, deserted Agra towards the close of his reign, and spent the greater part of his time in the Punjab and Kābul. Shāh Jāhan removed the seat of the imperial court to Delhi, but continued the construction of the Tāj and the other architectural monuments to which the city owes much of its fame. The success of Aurangzeb's rebellion against his father was assured by the victory gained at Sāmogarh in this District in 1658, and the deposed emperor was then confined in the fort. From the year 1666 the District dwindled into the seat of a provincial governor, and was often attacked by the Jāts. During the long decline of Mughal power, places in this District were constantly the scene of important battles. On the death of Aurangzeb his sons fought at Jājau near the Dholpur border. Early in 1713 the fate of the Mughal empire was again decided near Agra by the victory of Farrukh Siyar over Jahāndār. The importance of the District then declined; but in 1761 Agra was taken by the Jāts of Bharatpur under Sūraj Mal and Walter Reinhardt, better known by his native name of Sumrū. In 1770 the Marāthās overran the whole Doāb, but were expelled by the imperial forces under Najaf Khān in 1773. The Jāts then recovered Agra for a while, and were driven out in turn by Najaf Khān in the succeeding year. After passing through the usual con- History.

vulsions which marked the end of the last century in Upper India, the District came into the hands of the British by the victories of Lord Lake in 1803. The city was the capital of the North-Western Provinces from 1843 until the events of 1857, and still gives its name to the Province of Agra.

The story of the outbreak of the Mutiny at Agra in May, 1857, is related under AGRA CITY. As regards the District, the *tahsīls* and *thānas* fell into the hands of the rebels, after the defection of the Gwalior Contingent, on June 15. By July 2 the Nīmach and Nasīrābād mutineers had reached Fatehpur Sīkri, and the whole District became utterly disorganized. On July 29, however, an expedition from Agra recovered that post, and another sally restored order in the Itimādpur and Fīrozābād *parganas*. The Rājā of Awa maintained tranquillity in the north, and the Rājā of Bhadāwar on the eastern border. But after the fall of Delhi in September the rebels from that city, joined by the bands from Central India, advanced towards Agra on October 6. Four days later Colonel Greathed's column from Delhi entered Agra without the knowledge of the mutineers, who incautiously attacked the city and hopelessly shattered themselves against his well-tried force. They were put to flight easily and all their guns taken. The rebels still occupied Fatehpur Sīkri, but a column dispatched against that place successfully dislodged them. On November 20 the villages remaining in open rebellion were stormed and carried; and on February 4, 1858, the last man still under arms was driven out of the District.

Archaeology.

Fragments of Hindu buildings have been discovered at a few places, but none of any importance, and the archaeological remains of the District are chiefly those of the Mughal period. Among these must be mentioned the magnificent fort, with the buildings contained in it, and the beautiful Tāj at Agra; the tomb of Akbar at SIKANDRA; the buildings near Agra on the opposite bank of the river; and Akbar's city at FATEHPUR SĪKRI. The preservation and restoration of these splendid memorials has been undertaken by Government, and large sums have been spent, especially in recent years.

The people.

The District contains 1,197 villages and 9 towns. The population fell considerably between 1872 and 1881 owing to famine, and has not yet recovered its former level. The number at the last four enumerations was: (1872) 1,076,005, (1881) 974,656, (1891) 1,003,796, and (1901) 1,060,528. The District is divided into seven *tahsīls*—ITIMĀDPUR, FĪROZĀBĀD, BĀH, FATEHĀBĀD, AGRA, KIRAOLĪ, and KHAIRĀGARH—the

head-quarters of each being at a place of the same name. The principal towns are the municipalities of AGRA, the administrative head-quarters of the District, and FĪROZĀBĀD, and the 'notified area' of FATEHPUR SĪKRI. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Itimādpur	277	2	180	159,881	574	+ 4·0	4,333
Fīrozābād	203	1	186	119,775	590	+ 6·8	3,324
Bāh	341	1	204	123,591	362	− 1·9	3,824
Fatehābād	241	1	161	114,733	476	+ 5·8	2,897
Agra	202	1	140	291,044	1,441	+ 6·7	21,409
Kiraolī	272	2	171	123,812	455	+ 15·7	3,605
Khairāgarh	309	1	155	127,692	413	+ 3·1	2,911
District total	1,845	9	1,197	1,060,528	575	+ 5·6	42,303

Hindus form 86 per cent. of the total, and Musalmāns 12 per cent., while the followers of other religions include 12,953 Jains, 5,522 Christians, and 2,354 Aryas. The density is above the Provincial average, and the rate of increase between 1891 and 1901 was also high. More than 99 per cent. of the population speak Western Hindī, the prevailing dialect being Braj.

Castes and occupations.

The most numerous caste is that of Chamārs (leather-workers and labourers), 175,000. Next come Brāhmans, 110,000; Rājputs, 89,000; Jāts, 69,000; Baniās, 65,000; Kāchhīs (cultivators), 53,000; and Koris (weavers), 32,000. Gadariās (shepherds), Ahīrs (cowherds), Gūjars (graziers), Lodhas (cultivators), and Mallāhs (boatmen and fishermen), each number from 30,000 to 20,000. More than a quarter of the Musalmāns call themselves Shaikhs, but most of these are descended from converts. Pathāns number 11,000; and Bhishtis (water-carriers), Saiyids (converted Rājputs), Bhangīs (sweepers), and Fakīrs number from 8,000 to 6,000. About 48 per cent. of the population are supported by agriculture, 10 per cent. by general labour, and 8 per cent. by personal services. Rājputs, Brāhmans, Baniās, Jāts, and Kāyasths are the principal landholders, and Brāhmans, Rājputs, Jāts, and Chamārs the principal cultivators.

Christian missions.

Out of 2,343 native Christians in 1901, 1,158 were Methodists, 774 Anglicans, and 346 Roman Catholics. The Roman

Catholic Mission has been maintained continuously since the sixteenth century, while the Church Missionary Society commenced work in 1813 and the American Methodist Mission in 1881.

General agricultural conditions.

The quality of the soil is generally uniform, and the relative facility of irrigation is the most important agricultural factor. Along the rivers there is usually a rich tract of low alluvial soil called *kachhār*; but the area is very small, except on the bank of the Chambal. On the Gwalior border is found a black soil resembling the *mār* of BUNDELKHAND and called by the same name. In the tract north of the Jumna there has been some deterioration owing to the spread of the weed *baisurī* (*Pluchea lanceolata*), which is yet more common in MUTTRA DISTRICT. The west of the District is subject to considerable fluctuations, owing to excessive or deficient rainfall, and was formerly ravaged by wild cattle from Bharatpur, which are now kept out by a fence and ditch made in 1893.

Chief agricultural statistics and principal crops.

The tenures found in the District are those common elsewhere. *Zamīndāri mahāls* number 2,111, perfect *pattīdāri* 1,824, and imperfect *pattīdāri* 1,668. The last mentioned also include *bhaiyāchārā* or, as they are called here, *kabzadāri mahāls*. There are a few *talukdāri* estates, but none of importance. The main agricultural statistics for 1903–4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Itimādpur	277	205	75	23
Fīrozābād	203	141	60	13
Bāh	341	190	12	25
Fatehābād	241	169	60	19
Agra	202	151	60	23
Kiraolī	272	210	67	36
Khairāgarh	309	206	34	55
Total	1,845	1,272	368	194

The staple food-crops, and the areas under each in 1903–4, were: *bājra* (283 square miles), gram (237), *jowār* (179), wheat (176), and barley (192). Cotton covered 118 square miles, being grown in all parts of the District.

Improvements in agricultural practice.

There have been no improvements in agricultural practice of recent years. Since the last settlement, despite a slight increase in canal-irrigation, cultivation has fallen off. A steady demand exists for advances under the Land Improvement and Agriculturists' Loans Acts, which amounted to more than a

lakh under each Act during the ten years ending 1900, including sums of Rs. 42,000 and Rs. 28,000, respectively, advanced in the famine year 1896–7. In 1903–4 the advances were Rs. 5,000.

Cattle, horses, and camels. No indigenous breed of cattle is found, and the best animals are imported from Central India or the Punjab. An attempt has been made to improve the breed of horses, and two stallions are maintained by Government. A fair is held at BATESAR about November, to which large numbers of cattle, horses, and camels are brought by dealers from distant parts.

Irrigation. In 1903–4 the area irrigated was 368 square miles, out of a cultivated area of 1,272 square miles. Canals supplied 68 square miles and wells 299. The Upper Ganges Canal served about 5 square miles in the tract north of the Jumna, while the Agra Canal supplied the area between the Jumna and Utangan. The two tracts south of the Utangan are entirely dependent on wells, which are very deep and in places yield brackish water. The Utangan was once used as a source of irrigation; but in 1864 the works were closed, as the alterations in the natural channel had caused much damage.

Minerals. The most valuable mineral product of the District is sandstone, which is quarried in the western *tahsīls* of Kiraolī and Khairāgarh, and is extensively used for building, while millstones and grindstones are also largely made. Block *kankar* is found in the Chambal ravines, and nodular *kankar* is common everywhere.

Arts and manufactures. Agra city is the most important centre of arts and manufactures in the District. It is especially celebrated for marble articles beautifully inlaid with precious stones, and for the carving of stone or marble into screens of delicate pierced tracery. Cotton and woollen carpets are manufactured, and the silk and gold and silver embroidery of this place have some reputation. *Hukka* stems are also made, but the trade is decreasing. There were 8 cotton gins and presses in the District in 1903, employing 1,192 hands, and 3 spinning mills employing 1,562. Smaller industries include a flour-mill, a bone-mill, and a few indigo factories.

Commerce. The city likewise monopolizes the greater part of the trade. It is a centre for the collection of grain, oilseeds, and cotton for export; and also a distributing centre from which cotton goods, metals, sugar, and salt are sent to the surrounding tracts. Rājputāna and Central India supply cotton, oilseeds, stone, and salt, taking in return sugar, grain, cotton goods, and metals. Grain and cotton are exported to Bombay and Calcutta.

Railways and roads.

Agra is well supplied with railways. The East Indian Railway passes through the tract north of the Jumna, and is connected by a branch from Tūndla to Agra city with the Midland section of the Great Indian Peninsula Railway. The narrow-gauge Rājputāna-Mālwā line runs west from Agra, and a branch from this at Achhnerā joins Muttra and Hāthras. A new broad-gauge line from Agra to Delhi has recently been completed. The total length of metalled roads is 177 miles, of which 70 are maintained at the cost of Provincial revenues, while the remainder and also 434 miles of unmetalled roads are maintained from Local funds. Avenues of trees are kept up on 232 miles. An old imperial route from Delhi to the east passed through Agra, and other roads lead towards Bombay through Dholpur, to Rājputāna, and to the Doāb.

Famine.

The District has suffered much in periods of drought, and famines occurred in 1783, in 1813, in 1819, and in 1838. In the last-named year as many as 113,000 paupers were relieved in Agra city alone, while 300,000 starving people immigrated into the District. In 1860–1 the District was again visited by severe scarcity, though it did not suffer so greatly as the country immediately to the north. In July, 1861, the daily average of persons on relief works rose to 66,000. Distress was felt in 1868–9, but did not deepen into famine. In 1877–8 the failure of the autumn crops following high prices in the previous year caused famine, and relief works were opened on the Achhnerā-Muttra Railway and on the roads, the highest number employed at one time being 28,000. The last famine was in 1896–7, when distress was felt throughout the District, and most severely in the Bāh and Khairāgarh *tahsīls*, which are not protected by canals and have exceptionally poor means of irrigation. The labouring classes were the chief sufferers, and the number on relief rose to 33,000, but many of these were the wives and children of persons employed in the city who added to the family income by working on the new park at Agra.

District staff.

The District staff includes, besides the Collector, one or two members of the Indian Civil Service and five Deputy Collectors recruited in India. A *tahsīldār* resides at the head-quarters of each of the seven *tahsīls*.

Civil justice and crime.

There are two District Munsifs and a Judge of the Small Cause Court. The Subordinate Judge and the District and Sessions Judge have jurisdiction throughout the two Districts of Agra and Muttra. Serious crime is not uncommon, and

the District is noted for the large number of robberies and dacoities which occasionally take place. Cattle-thefts are also frequent, and the difficulty in detecting these offences is enhanced by the proximity of the borders of Native States. Infanticide was formerly prevalent, and the inhabitants of a few villages are still proclaimed and kept under observation.

Land revenue administration.

After the acquisition of the District in 1803, settlements were made for short terms, the demand being fixed on a consideration of the offers made by persons for whole *parganas*; but after the first year or two the demand was distributed over individual villages. The Bāh *tahsīl* was, however, farmed for some time. The first regular settlement was completed between 1834 and 1841, on the basis of a professional survey. Soils were classified and rent rates applied, which were derived by selection from actual rates; and the revenue was fixed at two-thirds of the 'assets' so calculated, but the estimates were also checked by comparison with the earlier assessments. The revenue demand amounted to 16·2 lakhs. In 1872 a revision was commenced. The valuation was based, as before, on rent rates actually paid; but several difficulties arose in fixing standard rates. Rents were usually paid in the lump, without any differentiation for different classes of soil. One-quarter of the cultivation was in the hands of the landlords, and in half the area rents had remained unchanged since the last settlement. The 'assets' calculated were revised by a comparison with the actual rent-rolls, but the assessment provided for prospective increases. The revenue fixed amounted to 18 lakhs, representing 50 per cent. of the 'assets'; the incidence fell at Rs. 1·7 per acre, varying from Rs. 1·1 in Bāh to Rs. 2 in the Itimādpur *tahsīl*. Extensive reductions of revenue were made in 1886 and 1891 in the Agra and Kiraolī *tahsīls*, owing to deterioration and a high assessment, but these tracts are now recovering. In 1903 it was decided that the settlement, which would ordinarily expire in 1907–9, should be extended for a further period of ten years. The receipts from land revenue and all sources have been, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	17,84	17,40	17,78	17,55
Total revenue . .	22,78	27,49	28,19	28,34

Local self-government.

Besides the two municipalities of AGRA and FĪROZĀBĀD, and the 'notified area' of FATEHPUR SĪKRI, there are six towns administered under Act XX of 1856. The income and expen-

diture of the District board is about 1·5 lakhs. The income is chiefly derived from rates, and nearly half the expenditure is on roads and buildings.

Police and jails.

The District Superintendent of police usually has 2 Assistant Superintendents and 9 inspectors working under him, and in 1904 he had a force of 158 subordinate officers and 840 men. There are also about 90 municipal and town police, and 2,300 rural and road police. The District contains thirty-three police stations, and a District and also a Central jail.

Education.

Agra takes a fairly high place in the United Provinces as regards literacy. At the Census of 1901, 4 per cent. of the people (7 males and 0·5 females) were returned as able to read and write. The number of schools recognized as public fell from 245 in 1880–1 to 192 in 1900–1, but the number of pupils rose from 7,683 to 9,322. In 1903–4 there were 266 public institutions with 13,911 pupils, of whom 1,513 were girls, besides 102 private schools with 2,099 pupils. Of the public institutions, five are managed by Government, and the rest chiefly by the District and municipal boards. There are three Arts colleges in AGRA CITY, in two of which law classes are held, and also a normal school and a medical school. Out of a total expenditure on education in 1903–4 of 2·4 lakhs, Rs. 67,000 was received from fees.

Hospitals and dispensaries.

The District contains 16 hospitals and dispensaries, with accommodation for 333 in-patients. In 1903 the number of cases treated was 178,000, of whom 5,000 were in-patients, and 8,000 operations were performed. The expenditure amounted to Rs. 58,000, chiefly from Local and municipal funds. The Thomason Hospital is one of the finest in the United Provinces.

Vaccination.

About 35,000 persons were vaccinated in 1903–4, representing 33 per 1,000 of the population. Vaccination is compulsory only in the municipalities and the cantonment.

[H. F. Evans, *Settlement Report* (1880); H. R. Nevill, *District Gazetteer* (1905).]

Itimādpur Tahsīl.—Northern *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 5′ and 27° 24′ N. and 77° 58′ and 78° 22′ E., with an area of 277 square miles. It was formerly known as Khandaulī. Population increased from 153,761 in 1891 to 159,881 in 1901. There are 180 villages and two towns, ITIMĀDPUR (population, 5,322), the *tahsīl* head-quarters, and TŪNDLA (3,044). The demand for land revenue in 1903–4

was Rs. 3,10,000, and for cesses Rs. 38,000. The density of population, 574 persons per square mile, is about the same as the District average. The *tahsīl* lies entirely north of the Jumna, and is crossed by the small river Jhirnā or Karon. Most of it forms a level upland of uniformly rich loam; but a network of ravines spreads inland from the Jumna and Jhirnā, which are barren and only of use for grazing. Bordering on the river beds lies a small tract of alluvial soil, which often deteriorates to sand, capable of producing only melons. In 1903–4 the area under cultivation was 205 square miles, of which 75 were irrigated, almost entirely from wells.

Fīrozābād Tahsīl.—North-eastern *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 59′ and 27° 22′ N. and 78° 19′ and 78° 32′ E., with an area of 203 square miles. Population increased from 112,153 in 1891 to 119,775 in 1901. There are 186 villages and one town, FĪROZĀBĀD (population, 16,849), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,25,000, and for cesses Rs. 27,000. The density of population, 590 persons per square mile, is slightly above the District average. The *tahsīl* lies north of the Jumna, and is crossed by two small streams, the Sirsā and Sengar. About one-sixth of the total area consists of the Jumna ravines, which produce only thatching-grass and a little stunted timber. The rest is a fertile tract of upland soil, with a few patches of *ūsar*, *dhāk* jungle (*Butea frondosa*), and here and there sandy ridges. In 1903–4 the area under cultivation was 141 square miles, of which 60 were irrigated. Wells supply over 90 per cent. of the irrigated area, and the Upper Ganges Canal serves about 5 square miles.

Bāh.—South-eastern *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 45′ and 26° 59′ N. and 78° 12′ and 78° 51′ E., with an area of 341 square miles. The *tahsīl* is sometimes called Pinähat. Population decreased from 125,848 in 1891 to 123,591 in 1901. There are 204 villages and one town, Bāh (population, 3,867), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,09,000, and for cesses Rs. 28,000. The density of population, 362 persons per square mile, is the lowest in the District. The *tahsīl* is almost an island, being cut off from the rest of the District by the Utangan and Jumna on the north, and from the Gwalior State by the Chambal on the south. While the average breadth between these rivers is 8 or 9 miles, the wild maze of deep ravines

which fringes them reduces the comparatively level central tract to a width of 4 or 5 miles. The villages in this area are perched on almost inaccessible positions—a memorial of the time when security was required against the revenue collector and foreign invaders. While the actual ravines are totally barren, and do not produce even trees, the low-lying land, here called *kachhār*, is exceptionally fertile. This is especially the case near the Chambal, where black soil, called *mār* as in Bundelkhand, is common. The Utangan *kachhār*, though of different composition, is equally fertile, while the Jumna low-lands are poorer. In 1903–4 the area under cultivation was 190 square miles, of which only 12 were irrigated, almost entirely from wells. The great depth of spring-level and the cost of irrigation make this tract peculiarly liable to distress in dry seasons, and it was the only *tahsīl* in the District which lost in population between 1891 and 1901.

Fatehābād.—South central *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 56′ and 27° 8′ N. and 77° 55′ and 78° 26′ E., with an area of 241 square miles. The *tahsīl* is bounded on the north-east by the Jumna, on the south by the Utangan, and on the west by the Khārī Nadī. Population increased from 108,446 in 1891 to 114,733 in 1901. There are 161 villages and one town, Fatehābād (population, 4,673), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,51,000, and for cesses Rs. 30,000. A considerable area is occupied by the ravines of the Jumna and Utangan; but most of the *tahsīl* is an upland tract of average fertility in which well-irrigation is easy, while the Agra Canal passes through it. There are two main depressions, one of which was probably an old bed of the Jumna. In 1903–4 the area under cultivation was 169 square miles, of which 60 were irrigated. The Agra Canal serves about one-quarter of the irrigated area, but wells are the most important source of supply.

Agra Tahsīl.—North central *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 3′ and 27° 17′ N. and 77° 51′ and 78° 13′ E., with an area of 202 square miles. Population increased from 272,718 in 1891 to 291,044 in 1901. There are 140 villages and one town, AGRA CITY (population, 188,022), the District and *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,24,000, and for cesses Rs. 30,000. The density of population, 1,441 persons per square mile, is more

than double the District average, owing to the inclusion of the city. On the north and east the Jumna forms the boundary, bordered by a fringe of ravines, usually extending a mile from the river. The ravines, though barren, produce valuable grass used for making thatch and rope, and also form grazing-grounds. In the lowlands near the river melons and other vegetables are grown. The greater part of the *tahsīl* is a level upland, with a well-marked depression in the west. In 1903-4 the area under cultivation was 151 square miles, of which 60 were irrigated. The Agra Canal supplies about one-third of the irrigated area, and wells serve most of the remainder. In a few places the subsoil water is brackish.

Kiraolī.—North-western *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of Fatehpur Sīkri, lying between 27° 0′ and 27° 17′ N. and 77° 30′ and 77° 55′ E., with an area of 272 square miles. Population increased from 106,977 in 1891 to 123,812 in 1901. There are 171 villages and two towns, FATEHPUR SĪKRI (population, 7,147) and ACHHNERĀ (5,375). The demand for land revenue in 1903-4 was Rs. 2,51,000, and for cesses Rs. 31,000. The density of population, 455 persons per square mile, is below the District average. The Utangan flows close to the southern border, while the Khārī Nadī crosses the centre. The eastern portion is level, but in the western half there are hills, the most important being the range on which the town of Fatehpur Sīkri stands. A much shorter and lower range of hills runs parallel to this, north of the Khārī Nadī. Both ranges consist of red sandstone. The area under cultivation in 1903-4 was 210 square miles, of which 67 were irrigated. About one-third of the irrigated area is served by the Agra Canal, and extensions are contemplated. Wells supply the rest, but in many parts the water is so brackish that without good rains it cannot be used.

Khairāgarh.—South-western *tahsīl* of Agra District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 45′ and 27° 4′ N. and 77° 26′ and 78° 7′ E., with an area of 309 square miles. Population increased from 123,893 in 1891 to 127,692 in 1901. There are 155 villages and one town, Jagnair (population, 4,051). Khairāgarh, the *tahsīl* head-quarters, is a small village. The demand for land revenue in 1903-4 was Rs. 2,85,000, and for cesses Rs. 35,000. The density of population, 413 persons per square mile, is much below the District average. The *tahsīl* is divided into two portions by the Utangan. The tract south-west of this

river is a spur of British territory almost surrounded by the Native States of Bharatpur and Dholpur, with a range of the Vindhyas along the northern boundary and isolated hills scattered farther south. These hills are of red sandstone, which is valuable for building purposes. Near the hills the soil is sandy, but after passing a tract of infertile clay a richer soil is reached. East of the Utangan the ordinary loam is found, stretching up to the ravines of the Khārī Nadī, which forms the eastern boundary of the *tahsīl* and is bordered by deep and precipitous ravines. There is no canal-irrigation, and in 1903-4 the irrigated area was only 34 square miles out of 206 under cultivation. Wells are the sole source of supply, but owing to the faulty sub-strata they cannot be made in many places.

Achhnerā.—Town in the Kiraolī *tahsīl* of Agra District, United Provinces, situated in 27° 10′ N. and 77° 46′ E., on the road from Agra city to Rājputāna, and at the junction of the Rājputāna-Mālwā and Cawnpore-Achhnerā Railways. Population (1901), 5,375. The place first became of importance under the Jāts in the eighteenth century, and a British *tahsīl* was situated here from 1803 to 1832. It then declined, but has again prospered since it became a railway junction. Achhnerā is administered under Act XX of 1856, with an income of about Rs. 1,200. The trade is largely local, but there is a cotton gin which employed 130 hands in 1903. The town contains a primary school with 85 pupils.

Situation. **Agra City.**—Administrative head-quarters of Agra District, United Provinces, situated in 27° 10′ N. and 78° 3′ E., on the right bank of the river Jumna, 843 miles by rail from Calcutta and 839 miles from Bombay. The city is the fourth in size in the United Provinces and is growing rapidly in population. The number of inhabitants at the four enumerations was as follows: (1872) 149,008, (1881) 160,203, (1891) 168,622, and (1901) 188,022. The figures include the population of the cantonments, which amounted to 22,041 in 1901. Hindus numbered 121,249, and Musalmāns 57,760.

History. Before the time of Akbar Agra had been a residence of the Lodī kings, whose city, however, lay on the left or eastern bank of the Jumna. Traces of its foundations may still be noticed opposite the modern town, and a flourishing suburb has grown up on part of the ancient site. Bābar occupied the old palace after his victory over Ibrāhīm Khān in 1526; and when a year later he defeated the Rājput forces near Fatehpur Sīkri and securely established the Mughal supremacy, he took up his permanent residence at this place. He died at Agra in

1530; but his remains were removed to Kābul, so that no mausoleum preserves his memory here. His son, Humāyūn, was for a time driven out of the Ganges valley by Sher Shāh, the Afghān governor of Bengal, and after his re-establishment on the throne he fixed his court at Delhi. Humāyūn was succeeded by his son Akbar, the great organizer of the imperial system, who removed the seat of government to the present Agra, which he founded on the right bank of the river, and built the fort in 1566. A second name of the city, Akbarābād, is still used by natives. Four years later he laid the foundations of Fatehpur Sīkri, and contemplated making that town the capital of his empire, but was dissuaded apparently by the superior situation of Agra on the great waterway of the Jumna. From 1570 to 1600 Akbar was occupied with his conquests to the south and east; but in 1601 he rested from his wars and returned to Agra, where he died four years later. During his reign the palaces in the fort were commenced, and the gates of Chitor were set up at Agra. Jahāngīr built his father's mausoleum at Sikandra, and also erected the tomb of his father-in-law, Itimād-ud-daula, on the left bank of the river, as well as the portion of the palace in the fort known as the Jahāngīr Mahal. In 1618 he left Agra and never returned. Shāh Jahān was proclaimed emperor at Agra in 1628, and resided here from 1632 to 1637. It is to his reign that most of the great architectural works in the fort must be referred, though doubtless many of them had been commenced at an earlier date. The Motī Masjid or pearl mosque, the Jāma Masjid or great mosque, and the Khās Mahal were all completed under this magnificent emperor. The Tāj Mahal, generally allowed to be the most exquisite piece of Muhammadan architecture in the world, commemorates his wife, Mumtāz Mahal. In 1658 Shāh Jahān's third son, Aurangzeb, rebelled and deposed him; but the ex-emperor was permitted to live in imperial state at Agra, though in confinement, until his death seven years later. Agra then sank for a while to the position of a provincial city, as Aurangzeb removed the seat of government permanently to Delhi. It had often to resist the attacks of the turbulent Jāts during the decline of the Mughals; and in 1761 it was actually taken by the Bharatpur forces under Sūraj Mal and Walter Reinhardt, better known by his native name of Sumrū. In 1770 the Marāthās ousted the Jāts, but were themselves driven out by the imperial troops under Najaf Khān four years later. Najaf Khān then resided in the city for many years with great state as imperial minister.

After his death in 1779 Muhammad Beg was governor of Agra; and in 1784 he was besieged by the forces of the emperor Shāh Alam and Mahādji Sindhia. Sindhia took Agra, and held it till 1787, when he was in turn attacked by the imperial troops under Ghulām Kādir and Ismail Beg. The partisan, General De Boigne, raised the siege by defeating them near Fatehpur Sīkri in June, 1788. Thenceforward the Marāthās held the fort till it was taken by Lord Lake in October, 1803. From this time it remained a British frontier fortress; and in 1835, when the new Presidency of Agra was founded, this city was chosen as the seat of government, though the Board of Revenue and the principal courts remained at Allahābād till 1843, when they were moved to Agra.

British rule continued undisturbed until the Mutiny in 1857. News of the outbreak at Meerut reached Agra on May 11, and the fidelity of the native soldiers at once became suspected. On May 30 two companies of Native Infantry belonging to the 44th and 67th Regiments, who had been dispatched to Muttra to escort the treasure into Agra, proved mutinous and marched off to Delhi. Next morning their comrades were ordered to pile arms, and sullenly obeyed. Most of them then quickly retired to their own homes. The mutiny at Gwalior took place on June 15, and it became apparent immediately that the Gwalior Contingent at Agra would follow the example of their comrades. On July 3 the British officials found it necessary to retire into the fort. Two days later the Nīmach and Nasīrābād rebels advanced towards Agra, and drove back the small British force at Sucheta after a brisk engagement. The mob of Agra rose at once, plundered the city, and murdered every Christian, European or native, upon whom they could lay their hands. The mutineers, however, moved on to Delhi without entering the city; and on July 8 partial order was restored in Agra. During the months of July and August the officials remained shut up in the fort, though occasional raids were made against the rebels in different directions. The Lieutenant-Governor of the North-Western Provinces (John Colvin) died during those months of trouble, and his tomb now forms a graceful specimen of Christian sculpture within the fort of the Mughals. After the fall of Delhi in September, the fugitives from that city, together with the rebels from Central India, unexpectedly advanced against Agra on October 6. Meanwhile, Colonel Greathed's column from Delhi had entered the city without the knowledge of the mutineers. Neither force knew of the

presence of the other till the attack took place, but the rebels were repulsed after a short contest, which completely broke up their array. Agra was henceforth relieved from all danger, and the work of reconstituting the District went on unmolested. The provisional Government continued to occupy the former capital until February, 1858, when it removed to Allahābād, which was considered a superior military position. Since that time Agra has become for administrative purposes merely the head-quarters of a Division and a District. But the ancient capital still maintains its natural supremacy as the finest city of Upper India, while the development of the railway system, of which it forms a great centre, is gradually restoring its commercial importance.

Description. The city of Agra stretches inland west and south from the Jumna, forming a roughly equilateral triangle, with its base running west from the river. The cantonments lie beyond the southern point, and include a large rectangular area. Most of the civil station is surrounded by portions of the native city, but the Judge's court and the jails lie north of it. The bazars are better built than those of most towns in the Provinces, and contain a large proportion of stone houses. The Mughal buildings for which the place is famous lie on the edge of the city or some distance away. The Jāma Masjid or great mosque stands at the centre of the south-eastern face, separated from the river by the vast pile of buildings included in the fort. From the north angle of the fort the Jumna curves away to the east, and on its bank at a distance of a mile and a half rises the lovely marble building famous as the Tāj. The space between, which was formerly an unsightly stretch of ravines, is now occupied by the MacDonnell Park, commenced as a famine work in 1897, which occupies about 250 acres. The tomb of Itimād-ud-daula and the Chīnī-kā-rauza are situated on the left bank of the river; and the magnificent tomb of Akbar is at SIKANDRA, 5 miles north-west of the city.

The Jāma Masjid. The main building of the Jāma Masjid, 130 feet in length by 100 in breadth, is divided into three compartments, each of which opens on the courtyard by a fine archway, and is surmounted by a low dome built of white and red stone in oblique courses, producing a singular, though not unpleasing, effect. The work has all the originality and vigour of the early Mughal style, mixed with many reminiscences of the Pathān school. The inscription over the main archway sets forth that the mosque was constructed by the emperor Shāh Jahān in 1644, after five years' labour. It was built in the name of his

daughter, Jahānārā, who afterwards devotedly shared her father's captivity when he had been deposed by Aurangzeb. This is the noble-hearted and pious princess whose modest tomb lies near that of the poet Khusrū, outside Delhi.

The fort. Opposite to the Jāma Masjid, across an open square, stands the fort, whose walls are 70 feet high and a mile and a half in circuit; but as they are only faced with stone and consist within of sand and rubble, they have no real strength, and would crumble at once before the fire of modern artillery. A drawbridge leads across the deep moat which surrounds the crenelated ramparts, giving access through a massive gateway and up a paved ascent to the inner portal. The actual entrance is flanked by two octagonal towers of red sandstone, inlaid with ornamental designs in white marble. The passage between them, covered by two domes, is known as the Delhi Gate. Within it, beyond a bare space once occupied by a courtyard, lie the palace buildings, the first of which is the Dīwān-i-ām, or hall of public audience, formerly used as an armoury. It was built by Aurangzeb in 1685, and did duty as an imperial hall and courthouse for the palace. The roof is supported by colonnades which somewhat impair the effect of the interior. This hall opens on a large court or tilt-yard; and while the emperor with his grandees sat in the open hall, the general public occupied three of the cloisters. A raised throne accommodated the sovereign, behind which a door communicated with the private apartments of the palace. The main range of buildings does not belong to Akbar's time, but was built by his son and grandson. The centre consists of a great court 500 feet by 370, surrounded by arcades and approached at opposite ends through a succession of corridors opening into one another. The Dīwān-i-ām is on one side, and behind it are two smaller enclosures, the one containing the Dīwān-i-khās and the other the harem. Three sides were occupied by the residences of the ladies, and the fourth by three white pavilions. The Dīwān-i-khās, or hall of private audience, consists of two corridors, 64 feet long, 34 feet broad, and 22 feet high, both built in 1637. It has been repaired in a spirit of fidelity to the original. The Machchhī Bhawan, or court between these and the Dīwān-i-ām, was probably built by Shāh Jahān. On the river side of this court are two thrones, one of white marble and the other of black slate. The substructures of the palace are of red sandstone; but the corridors, rooms, and pavilions are of white marble elaborately carved. Next to the Dīwān-i-khās comes the Shīsh Mahal

Oriental bath adorned with thousands of small mirrors. To the south again lies a large red building called the Jahāngīr Mahal, with a fine two-storeyed façade and relieving lines of white marble. One of the inner courts is 70 feet square, and both are of red stone; between them is a handsome entrance on pillars. The Jahāngīr Mahal presents some admirable examples of Hindu carving, with projecting brackets as supports to the broad eaves and to the architraves between the pillars, which take the place of arches. This Hindu form is adopted in the Jahāngīr Mahal and in the neighbouring Saman Burj instead of the arch; and the ornamentation of the former is purely Hindu. The exquisite Motī Masjid, or pearl mosque, stands to the north of the Dīwān-i-ām. It is raised on a lofty sandstone platform, and has three domes of white marble with gilded spires. The domes crown a corridor open towards the court and divided into three aisles by a triple row of Saracenic arches. The pearl mosque is 142 feet long by 56 feet high, and was built by Shāh Jahān in 1654. It is much larger than the pearl mosque at Delhi; and its pure white marble, sparingly inlaid with black lines, has an effect at once noble and refined. Only in the slabs composing the floor is colour employed—a delicate yellow inlaid into the white marble. There is, however, in the Agra fort a second and much smaller pearl mosque, which was reserved for the private devotions of the emperor. This exquisite miniature house of prayer is entirely of the finest and whitest marble, without gilding or inlaying of any sort.

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The Tāj Mahal, with its beautiful domes, 'a dream in marble,' rises on the river bank. It is reached from the fort by the Strand Road made in the famine of 1838, and adorned with stone *ghāts* by native gentlemen. The Tāj was erected as a mausoleum for the remains of Arjmand Bānū Begam, wife of the emperor Shāh Jahān, and known as Mumtāz Mahal or 'exalted of the palace.' She died in 1629, and this building was begun soon after her death, though not completed till 1648. The materials are white marbles from Makrāna and red sandstone from Fatehpur Sīkri. The complexity of its design and the delicate intricacy of the workmanship baffle description. The mausoleum stands on a raised marble platform, and at each of the corners rises a tall and slender minaret of graceful proportions and exquisite beauty. Beyond the platform stretch the two wings, one of which is itself a mosque of great architectural merit. In the centre of the whole design, the mausoleum occupies a square of 186 feet, with the angles

marble screens stretching from pillar to pillar. The whole forms a lovely example of marble open filigree work.

Public buildings, &c.

In addition to the ordinary District offices, Agra contains some fine public buildings. Among these may be mentioned the three colleges, the Roman Catholic Cathedral and the Mission buildings, the Thomason Hospital, now one of the best equipped in the United Provinces, and the Lady Lyall Hospital, the Central and District jails, and the Lunatic Asylum. Agra is the head-quarters of the Commissioner of the Division, the Commissioner of Salt Revenue in Northern India, two Superintending Engineers in the Irrigation Branch, the Chemical Examiner to Government in the United Provinces, and an Inspector of Schools. The city was the earliest centre of missionary enterprise in Northern India, for the Roman Catholic Mission was founded here in the sixteenth century, and in 1620 a Jesuit College was opened. Northern India was constituted an Apostolic Vicariate in 1822, with head-quarters at Agra; but in 1886 Agra became the seat of an Archbishop appointed by the Holy See. The Baptist Mission here was founded in 1811, and the Church Missionary Society commenced work in 1813.

Municipality.

Agra was constituted a municipality in 1863. During the ten years ending 1901 the income and expenditure averaged 3·3 lakhs, excluding the loan account. In 1903–4 the income was 5·3 lakhs, which included octroi (2·4 lakhs), water rate (Rs. 68,000), rents (Rs. 37,000), sale of water (Rs. 33,000), and tolls (Rs. 35,000). The expenditure was 4·8 lakhs, including repayment of loans (1·3 lakhs), conservancy (Rs. 70,000), water-supply and drainage (capital, Rs. 12,000; maintenance, Rs. 63,000), administration and collection (Rs. 50,000), roads and buildings (Rs. 24,000), and public safety (Rs. 41,000). An attempt was made between 1884 and 1887 to obtain a water-supply from an artesian well, but was abandoned in favour of a supply from the Jumna. The work commenced in 1889, and water was first supplied to the city in 1891. Many extensions and improvements have been made since, and loans amounting to nearly 16 lakhs have been obtained from Government. In 1903 the daily consumption of filtered water was more than 9½ gallons per head, and there were 811 house connexions. About 27 miles of drains are flushed daily. The drainage system has long been recognized as defective, owing to the small flow in the Jumna during the hot season and changes in its channels. An intercepting sewer has recently been completed, which discharges its contents below the city.

Cantonment. The cantonment is ordinarily garrisoned by British and native infantry and British artillery. Agra is also the head-quarters of the Agra Volunteer Corps. The cantonment fund has an annual income and expenditure of over Rs. 60,000; a Cantonment Magistrate is stationed here.

Trade. The trade of Agra has undergone considerable changes under British rule, the principal factors being the alteration in trade routes due to the extension of railways and changes in native fashions. It was formerly the great centre through which sugar and tobacco passed to Rājputāna and Central India, while salt was received from Rājputāna, cotton and *ghī* from the surrounding country, and stone from the quarries in the west of the District. There was also a considerable trade in grain, the direction of which varied according to the seasons. Agra has now become a great railway centre, at which the East Indian and Great Indian Peninsula broad-gauge lines and the narrow-gauge Rājputāna-Mālwā line meet, and these important functions of collection and distribution have increased and been added to. The recent opening of another broad-gauge line to Delhi will increase its trade still further. In addition to the products of the country, European piece-goods and metals are largely imported, and distributed to the neighbouring towns and villages. Agra was also famous for its native arts and manufactures, such as gold and silver wire-drawing, embroidery, silk-weaving, calico-printing, pipe-stems, shoes, carving in marble and soapstone, inlaying of precious stones in marble, and the preparation of millstones, grinding-stones, and stone mortars. Consequent on the growing preference for articles of European manufacture, the industries connected with embroidery, silk-weaving, wire-drawing, shoemaking, and pipe-stems have declined; and calico-printing is little practised. On the other hand, the trade in useful stone articles has prospered, and ornamental work has been fostered by the large sums spent in the restoration of the principal buildings and by the demand created by European visitors. And although some of the indigenous arts are depressed, new industries have been created. In 1903 there were six cotton gins and presses, employing 959 hands; and three cotton-spinning mills, with 30,000 spindles and 1,562 workers. The Agra Central jail has long been noted for the production of carpets, of which about 15,000 square yards are turned out annually; and a private factory manufactures the same articles. A flour-mill and a bone-mill are also working. The total value of the annual rail-borne traffic of Agra is nearly

4 crores of rupees. The trade with the rest of the United Provinces amounts to nearly half of this, and that with Rājputāna and Central India to a quarter. Bombay has a larger share of the foreign trade than Calcutta.

Education. Agra is one of the chief educational centres in the United Provinces. The Agra College was founded by Government in 1823, and endowed by a grant of land in 1831. In 1883 it was made over to a local committee, and now receives an annual grant of Rs. 7,000 from Government. In 1904 it contained 175 students in the Arts classes, besides 45 in the law classes and 312 in the school department. The Roman Catholic College, St. Peter's, was founded in 1841, and is a school for Europeans and Eurasians, with six students reading in college classes in 1904. In 1850 the Church Missionary Society founded St. John's College, which in 1904 contained 128 students in college classes and 398 in the school. It also has a business department with 56 pupils, and five branch schools with 350. The municipality maintains one school and aids 22 others with 1,756 pupils. In addition to these colleges and schools, there are a normal school for teachers, and a medical school (founded in 1855) for training Hospital Assistants. The latter contained 260 pupils, including female candidates for employment under the Lady Dufferin Fund. There are about twenty printing presses, and four weekly and six monthly papers are published. Agra is noted as the birthplace of Abul Fazl, the historian of Akbar, and his brother, Faizī, a celebrated poet. It produced several distinguished authors of Persian and vernacular literature during the nineteenth century. Among these may be mentioned Mīr Takī and Shaikh Walī Muhammad (Nazīr). The poet Asad-ullah Khān (Ghālib) resided at Agra for a time.

Batesar.—Village in the Bāh *tahsīl* of Agra District, United Provinces, situated in 26° 56′ N. and 78° 33′ E., at a bend of the Jumna, 41 miles south-east of Agra city. Population (1901), 2,189. The place is celebrated for its fair, the largest in the District. Originally this was a religious festival, the great day being on the full moon of Kārtik (October–November), but it is now also celebrated as a cattle fair. Horses, cattle, camels, and even elephants are exhibited, and remounts for the native army and police are often bought here. For convenience a branch Government treasury is opened at the time of the fair. In 1904 the stock shown included 35,000 horses and ponies, 18,000 camels, 10,000 mules and donkeys, and 79,000 head of cattle; and about Rs. 13,000

was collected on account of bridge tolls, registration fees, and shop rents.

Fatehpur Sīkri.—Town in the Kiraolī *tahsīl* of Agra District, United Provinces, situated in 27° 5′ N. and 77° 40′ E., on a metalled road 23 miles west of Agra city. Population (1901), 7,147. It was close to the village of Sīkri that Bābar defeated the Rājput confederacy in 1527; and here on the ridge of sandstone rocks dwelt the saint Salīm Chishti, who foretold to Akbar the birth of a son, afterwards the emperor Jahāngīr. In 1569 Akbar commenced to build a great city called Fatehpur, and within fifteen years a magnificent series of buildings had been erected. The city was abandoned as a royal residence soon after its completion, but was occupied for a short time in the eighteenth century by Muhammad Shāh; and Husain Alī Khān, the celebrated Saiyid general, was murdered near here in 1720. The site of Fatehpur Sīkri is still surrounded on three sides by the great wall, about 5 miles long, built by Akbar; but most of the large space enclosed is no longer occupied by buildings. The modern town lies near the western end, partly on the level ground and partly on the slope of the ridge. It is a small, well-paved place, containing a dispensary and a police station.

From close by the highest houses in the town a flight of steps leads up to the magnificent gateway, called the Buland Darwāza or 'lofty gate,' which forms the entrance to the great quadrangle of the mosque, 350 feet by 440. In this stands the marble building containing the tomb of the saint Salīm Chishti, the walls of which are elaborately carved. The sarcophagus itself is surrounded by a screen of lattice-work and a canopy inlaid with mother-of-pearl, which has recently been restored. Close by the north wall of the mosque are the houses of the brothers, Abul Fazl and Faizī, but the main block of the palace buildings lies some distance to the north-east. On the west of this block is the large palace called after Jodh Bai, the Rājput wife of Akbar. It consists of a spacious courtyard, surrounded by a continuous gallery, from which rise rows of buildings on the north and south, roofed with slabs of blue enamel. A lofty and richly carved gate gives access to a terrace, on which stand the so-called houses of Bīrbal and Miriam, or the 'Christian lady.' The former is noticeable for its massive materials and the lavish minuteness of its detail. The 'Christian lady' was probably a Hindu wife. Beyond these buildings is another great courtyard, divided into two parts. The southern half contains the private apartments of

Akbar with the Khwābgāh, or sleeping-place, and the lovely palace of the Turkish Sultāna. The latter is of sandstone, richly carved with geometrical patterns and hunting scenes. The Pānch Mahal or five-storeyed 'building,' and the Dīwān-i-khās or private audience chamber, are the principal structures in the northern portion. The Pānch Mahal consists of five galleries, one above another, and appears to have been copied from a Buddhist model. The Dīwān-i-khās contains an enormous octagonal pillar, crowned by a circular capital, from which four galleries run to the corners of the room. According to tradition, Akbar used to hold his famous theological discussions in this place. Many of the buildings, and especially Miriam's house and the Khwābgāh, were adorned with paintings. These have largely perished or been destroyed; but the scheme of some has been recovered, and a few restorations have been made. The eastern front of the palace was formed by the Dīwān-i-ām or public hall, close to which lay the baths on the south, and a great square called the Mint on the north-east. The palace buildings stand on the crest of the ridge, and below them lies a depression which once formed a great lake. Beyond the lake stretched the royal park. The long descent from the Dīwān-i-ām, through the Naubat-khāna or entrance gate to the Agra road, is flanked by confused masses of ruins, the remains of the bazars of the old city.

Fatehpur Sīkri was a municipality from 1865 to 1904. During the ten years ending 1901 the income and expenditure averaged about Rs. 5,000, octroi supplying most of the income. In 1903–4 the income was Rs. 9,000, and the expenditure Rs. 10,000. The town has now been made a 'notified area.' In the time of Akbar it was celebrated for its fabrics of hair and silk-spinning, besides the skill of its masons and stone-carvers. At present cotton carpets and millstones are the chief products. There are two schools with about 100 pupils.

[E. W. Smith, *The Mughal Architecture of Fatehpur Sīkri*, 4 vols. (Allahābād, 1894–8).]

Fīrozābād Town.—Head-quarters of the *tahsīl* of the same name in Agra District, United Provinces, situated in 27° 9′ N. and 78° 23′ E., on the road from Agra city to Mainpurī, and on the East Indian Railway. Population (1901), 16,849. The town is ancient, but is said to have been destroyed and rebuilt in the sixteenth century by a eunuch, named Malik Fīroz, under the orders of Akbar, because Todar Mal was insulted by the inhabitants. It contains an old mosque and some temples, besides a dispensary, and branches of the Ameri-

can Methodist Mission and the Church Missionary Society. A municipality was constituted in 1869. During the ten years ending 1901 the income and expenditure averaged about Rs. 14,000. In 1903-4 the income was Rs. 16,000, chiefly from octroi (Rs. 12,000); and the expenditure was Rs. 20,000. The trade of the place is chiefly local, but there is a cotton-ginning factory employing about 100 hands. The municipality maintains a school and aids four others with 190 pupils, besides the *tahsīlī* school with about 80 pupils.

Itimādpur Town.—Head-quarters of the *tahsīl* of the same name in Agra District, United Provinces, situated in 27° 14′ N. and 78° 12′ E., on the main road from Agra city to Mainpurī, and 2½ miles from the East Indian Railway junction at TŪNDLA. Population (1901), 5,322. The town is named after its founder, Itimād Khān, who built a large masonry tank here, and is said to have been a eunuch in the service of Akbar. It is administered under Act XX of 1856, with an income of about Rs. 900. Trade is purely local. The *tahsīlī* school has about 100 pupils, and a primary girls' school 16 pupils, and there is a branch of the American Methodist Mission.

Sikandra.—Village in the District and *tahsīl* of Agra, United Provinces, situated in 27° 13′ N. and 77° 57′ E., 5 miles north-west of Agra city on the Muttra road. Population (1901), 1618. The village is said to have received its name from Sikandar Lodī, who built a palace here in 1495, which now forms part of the orphanage. Jahāngīr's mother, who died at Agra in 1623, is buried here; but the place is chiefly famous for the tomb of Akbar, which was built by Jahāngīr, and completed in 1612-3. It stands in a spacious garden of 150 acres, surrounded by massive walls and gateways in the middle of each side. The entrance is by a gateway of magnificent proportions, with four lofty minarets of white marble. The building is of unusual design, and according to Fergusson was probably copied from a Hindu or Buddhist model. It consists of a series of four square terraces, placed one above the other and gradually decreasing in size. The lowest is 320 feet square and 30 feet high, and has a large entrance adorned with marble mosaic. Above the highest of these four terraces, which are chiefly of sandstone, stands a white marble enclosure, 157 feet square, the outer wall of which is composed of beautifully carved screens. The space within is surrounded by cloisters of marble, and paved with the same material. In the centre is the marble cenotaph of the great emperor, a perfect example of the most

delicate arabesque tracery, among which may be seen the ninety-nine names of God. Finch, after describing his visit to the tomb in 1609, says that the intention was to cover this upper enclosure with a marble dome lined with gold. The Church Missionary Society has an important branch at Sikandra, with a church built in 1840, and an orphanage established after the famine of 1837–8, which contains about 409 boys and girls, mostly famine waifs. In addition to ordinary literary subjects, some of the children are taught cloth and carpet-weaving, bookbinding, printing, and other trades.

Tūndla.—Village in the Itimādpur *tahsīl* of Agra District, United Provinces, situated in 27° 13′ N. and 78° 14′ E. Population (1901), 3,044. It is the junction for Agra on the main line of the East Indian Railway, and is an important railway centre. The railway medical officer residing here is usually invested with magisterial powers to try petty cases, and there is a church with a resident clergyman. The town is administered under Act XX of 1856, with an income of about Rs. 500.

Boundaries, configuration, and river system.

Farrukhābād District. — Easternmost District of the Agra Division, United Provinces, lying between 26° 46′ and 27° 43′ N. and 79° 8′ and 80° 1′ E., with an area of 1,685 square miles. On the north the Ganges divides it from Budaun and Shāhjahānpur; on the east is the Oudh District of Hardoī, partly separated by the Ganges; Cawnpore and Etāwah lie to the south, and Mainpurī and Etah to the west. The greater part of the District lies in the DOĀB along the right bank of the Ganges, but the Alīgarh *tahsīl* lies wholly on the opposite bank. The former division consists of an upland area called *bāngar*, and a low-lying tract called *tarai*, *katri*, or *kachohā*. The lowlands stretch from the present bed of the Ganges to the old high bank, with a breadth of 6 miles in the north of the District. At Farrukhābād the river is at present close to its high bank, but farther south it diverges again to a distance of 4 miles. The tract across the Ganges is entirely composed of low-lying land subject to floods, which cover almost the whole area. The uplands are divided into a series of small *doābs* by the rivers Bagār, Kālī Nadī (East), Isan, Arind, and Pāndū, which flow roughly parallel to each other and join the Ganges. These divisions are generally similar. On each bank of the rivers is a small area of alluvial soil, from which rise sandy slopes. The soil gradually improves, becoming less sandy; and the central portion is good loam, with here and there patches of barren land called *ūsar*, often covered with saline efflorescences. The most northern division, from

the old high bank to the Bagār, is the poorest. Besides the small rivers already mentioned, the Rāmgangā flows through part of the Alīgarh *tahsīl*; and an old channel of the Ganges, called the Būrhgangā, lies between the high bank and the present bed of the river in the north of the District. Shallow lakes or *jhīls* are common in the Kaimganj, Alīgarh, Chhibrāmau, and Tirwā *tahsīls*.

Geology. The District consists entirely of Gangetic alluvium. *Kankar* is the chief mineral product, but saline efflorescences (*reh*) are also found.

Botany. The flora presents no peculiarity. The principal groves, which cover 55 square miles, are of mango trees, and the District is uniformly though not thickly wooded. The toddy palm (*Borassus flabellifer*) is commoner than in the neighbouring Districts. In the alluvial tract *babūl* is the commonest tree. In the uplands there are considerable stretches of *dhāk* jungle (*Butea frondosa*). Some damage has been done in the sandy tracts by the spread of a grass called *kāns* (*Saccharum spontaneum*).

Fauna. Antelope are still very common, and *nīlgai* are occasionally seen. Jackals, hyenas, wolves, and foxes are also found, and wild hog are numerous. Snipe and duck abound in the cold season. Fish are common in the rivers and small tanks, and are largely used as food. Crocodiles are found in the Ganges and Kālī Nadī.

Climate and temperature. Farrukhābād is one of the healthiest Districts in the Doāb. Its general elevation is considerable, the climate is dry, and the country is remarkably free from epidemics. The trans-Gangetic *parganas* are, however, damper and more feverish, though they are cool in summer. The mean temperature varies from about 58° in January to about 95° in June.

Rainfall. The annual rainfall averages about 33 inches. Variations from year to year are considerable, but the fall is very uniform throughout the District.

History. The northern part of the District was included in the ancient kingdom of PANCHĀLA mentioned in the Mahābhārata, and places are still connected by tradition with episodes in the life of Draupadī, wife of the Pāndava brothers. Numerous remains of the Buddhist period point to the importance of several towns early in the Christian era. In the fourth and fifth centuries Kanauj was included in the domains of the Gupta emperors; and when the power of that dynasty declined, in the sixth century, a petty independent line of Maukharī kings ruled here. The Maukharīs fell before the kings of

Mālwā, who in turn were defeated by the ruler of Thānesar in the Punjab. Harshavardhana of Thānesar, early in the seventh century, founded a great empire in Northern India, and Hiuen Tsiang, the Chinese pilgrim, describes the magnificence of his court[1]. The empire collapsed on Harshavardhana's death, but inscriptions and copperplates tell of other dynasties ruling at Kanauj in later years. At the end of 1018, when Mahmūd of Ghazni crossed the Jumna, the Rājputs were in power at Kanauj, and had to submit to the sudden shock of Muslim invasion. Although Kanauj was plundered, the expedition was a mere raid, and Rāthors ruled it for nearly 200 years longer. In 1194, however, Muhammad Ghorī defeated the last great Rājā, Jai Chand, and Hindu rule in the central parts of the Provinces was practically at an end. During the early years of Muhammadan rule Kanauj was the seat of a governor, and the District was constantly the scene of revolt. At the end of the fourteenth century part of it was incorporated in the new kingdom of Jaunpur, while Kanauj became the residence of Mahmūd Tughlak when he lost the throne of Delhi. During the first eighty years of the fifteenth century the District suffered much from the struggle between Delhi and Jaunpur, but in 1479 was finally restored to the empire. While the Mughal power was gradually being consolidated in the sixteenth century, and during the struggle with the Pathāns which led to the establishment of the short-lived Sūri dynasty, fighting was frequent, and in 1540 Humāyūn suffered a disastrous defeat near Kanauj. Under the great Mughal emperors the District enjoyed comparative peace, but early in the eighteenth century it became the nucleus of one of the independent states which arose as the Mughal empire crumbled away. The founder was Muhammad Khān, a Bangash Afghān belonging to a village near Kaimganj. He brought 12,000 men to Farrukh Siyar in his fight for the throne, and was rewarded by a grant in Bundelkhand. In 1714 he obtained a grant near his own home and founded the city of Farrukhābād. Muhammad Khān was governor of the Province of Allahābād for a time, and later of Mālwā, but his chief services were rendered as a soldier. At his death in 1743 he held most of the present Districts of Farrukhābād, Mainpurī, and Etah, with parts of Cawnpore, Alīgarh, Etāwah, Budaun, and Shāhjahānpur. His son, Kaim Khān, was craftily embroiled with the Rohillas by Safdar Jang, Nawāb of Oudh, and

[1] Beal, *Buddhist Records of the Western World*, vol. i, p. 206; see also Bana's *Harsa Charita*.

lost his life near Budaun in 1749. The Farrukhābād domains were formally annexed to Oudh, but were recovered in 1750 by Ahmad Khān, another son of the first Nawāb, who defeated and slew Rājā Nawal Rai, the Oudh governor. Safdar Jang called in the Marāthās, who besieged Ahmad Khān in the fort at Fatehgarh near Farrukhābād, and drove off the Rohillas who had come to his aid. Ahmad Khān had to fly to the foot of the Himālayas, and in 1752 was allowed to return after ceding half his possessions to the Marāthās. In 1761 he did good service to Ahmad Shāh Durrāni at Pānīpat, and regained much of his lost territory. The recovery embroiled him with Shujā-ud-daula, the Nawāb of Oudh, who coveted the tract for himself; but Ahmad Khān was too strong to be attacked. In 1771 the Marāthās again recovered the *parganas* which had been granted to them, and shortly afterwards Ahmad Khān died. His territory then became tributary to Oudh. In 1777 British troops were stationed at Fatehgarh as part of the brigade which guarded Oudh, and from 1780 to 1785 a British Resident was posted here. The latter act was one of the charges against Warren Hastings, who had engaged to withdraw the Resident. In 1801 the Oudh government ceded to the British its lands in this District, together with the tribute paid by the Nawāb of Farrukhābād, and the latter gave up his sovereign rights in 1802. Two years later Holkar raided the Doāb, but was caught by Lord Lake after a brilliant night march and his force was cut to pieces close to Farrukhābād.

The District remained free from historical events up to the date of the Mutiny. News of the outbreak at Meerut reached Fatehgarh on May 14, 1857; and another week brought tidings of its spread to Alīgarh. The 10th Native Infantry showed symptoms of a mutinous spirit on May 29; but it was not till June 3 that a body of Oudh insurgents crossed the Ganges, and arranged for a rising on the following day. The European officials and residents abandoned Fatehgarh the same evening; but several of them returned a few days later, and remained till June 18, when another outbreak occurred, and the rebels placed the Nawāb of Farrukhābād on the throne. The 41st Native Infantry, from Sītāpur, marched into Fatehgarh, and the Europeans began to strengthen the fort. On June 25 the rebels attacked their position, which became untenable by July 4. The fort was then mined, and its defenders escaped in boats. The first Fatehgarh boat reached Cawnpore, where all its fugitives were murdered by the Nāna

on July 10; the second boat was stopped ten miles down the Ganges, and all in it were captured or killed except three. The Nawāb governed the District unopposed till October 23, when he was defeated by the British at Kanauj. The troops, however, passed on, and the Nawāb, with Bakht Khān of Bareilly, continued in the enjoyment of power until Christmas. On January 2, 1858, British forces crossed the Kālī Nadī and took Fatehgarh next day. The Nawāb and Fīroz Shāh fled to Bareilly. Brigadier Hope defeated the Budaun rebels at Shamsābād on January 18, and Brigadier Seaton routed another body on April 7. In May, a force of 3,000 Bundelkhand insurgents crossed the District, and besieged Kaimganj; but they were soon driven off into the last rebel refuge in Oudh, and order was not again disturbed.

Archaeology.

The ancient sites in the District are numerous. SANKĪSĀ has been identified with a great city mentioned by Hiuen Tsiang, and from KAMPIL westwards are mounds which contain a buried city. The buildings of the Hindu and Buddhist periods have, however, crumbled away, or, as at KANAUJ, been used as the material for mosques. The buildings of the Nawābs of Farrukhābād are not important.

The people.

There are eight towns and 1,689 villages in the District. Population decreased between 1872 and 1881 owing to famine, and in the next decade owing to deterioration due to floods; it has risen with the return of more favourable seasons. The number of inhabitants at the last four enumerations was as follows: (1872) 917,178, (1881) 907,608, (1891) 858,687, and (1901) 925,812. There are six *tahsīls*—KANAUJ, TIRWĀ, CHHIBRĀMAU, FARRUKHĀBĀD, KAIMGANJ, and ALĪGARH—the head-quarters of each being at a town of the same name, except in the case of Kanauj, of which the head-quarters are at Sarai Mīrān. The principal towns are the municipality of FARRUKHĀBĀD *cum* FATEHGARH and KANAUJ. The table on the next page gives the chief statistics of population in 1901.

Hindus form 88 per cent. of the total, and Musalmāns 12 per cent. There are only 1,100 Christians. The density is rather above the Provincial average, and between 1891 and 1901 the rate of increase was comparatively large. More than 99 per cent. of the population speak Western Hindī of the Kanaujiā dialect.

Castes and occupations.

The following are the most numerous Hindu castes: Kisāns (cultivators, akin to the Lodhas of other Districts), 94,000; Chamārs (leather-workers and labourers), 93,000; Ahīrs

(graziers and cultivators), 89,000; Brāhmans, 76,000; Rājputs, 73,000; and Kāchhīs (cultivators), 70,000. Kurmīs (28,000) are also important for their skill and industry in agriculture. The only caste peculiar to the District is that of the Sādhs, most of whom are cotton-printers by trade; they are distinguished by belonging to a special sect, which does not recognize the worship of idols or the supremacy of the Brāhman. The District is notable for the large number of Muhammadans of foreign origin; Pathāns number 34,700; Shaikhs, 29,800; Saiyids, 5,800; the most numerous artisan caste is that of the Dhunas or cotton-carders, 7,100. As many as 61 per cent. of the population are supported by agriculture, which is a high proportion. Rājputs hold two-fifths of the land, and Brāhmans and Musalmāns nearly one-fifth each. Ahirs, Kisāns, Rājputs, Brāhmans, Kāchhīs, and Kurmīs occupy the largest areas as cultivators.

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Kanauj . .	181	1	206	114,215	631	− 2·6	4,157
Tirwā . .	380	2	256	180,086	474	+ 6·8	3,529
Chhibrāmau .	240	2	240	126,705	528	+ 14·0	3,204
Farrukhābād .	339	1	387	250,352	739	+ 2·2	12,206
Kaimganj .	363	2	397	168,606	464	+ 17·4	3,061
Alīgarh . .	182	...	203	85,848	472	+ 17·2	2,059
District total	1,685	8	1,689	925,812	549	+ 7·8	28,216

Christian missions.

The American Presbyterian Mission was founded in 1838, and 489 out of the 699 native Christians in 1901 were Presbyterians. Many of them reside in the village of Rakha near Fatehgarh, which was held by the mission on lease for sixty years.

General agricultural conditions.

The soil varies from sand to fertile loam and stiff clay, which ordinarily produces rice. Each of the four watersheds between the small rivers which divide the uplands is generally composed of good loam, with occasional patches of sandy soil, and some large *ūsar* plains, the soil near which is clay. The slopes to the rivers are usually sandy; and these and the lowlands near the Ganges and the Alīgarh *tahsīl* are precarious tracts, especially liable to suffer from excessive rain, which causes a rank growth of coarse grasses. On the whole the Rāmgangā deposits a more fertile silt than the Ganges.

Chief agricultural statistics and principal crops.

The District is held on the usual tenures of the United Provinces. Out of 3,563 *mahāls*, 2,432 are *zamīndāri*, 1,046 *pattīdāri*, and 85 *bhaiyāchārā*. A few estates are held on *talukdāri* tenure. The main agricultural statistics for 1903-4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Kanauj . . .	181	124	43	21
Tirwā . . .	380	197	101	76
Chhibrāmau . .	240	160	64	29
Farrukhābād . .	339	223	81	51
Kaimganj . . .	363	226	72	70
Alīgarh . . .	182	111	17	33
Total	1,685	1,041	378	280

The principal food-crops, with the areas sown in 1903-4, are: wheat (326 square miles), barley (191), *jowār* (140), and gram (93). Less important are maize (87), *bājra* (102), and *arhar* (72). Rice is grown chiefly in the outlying village lands, and is of poor quality except in the Tirwā *tahsīl*. Cotton occupied 19 square miles and sugar-cane 21; but the most valuable miscellaneous crops are poppy (47 square miles), tobacco (3), and potatoes (7). The tobacco of the Kaimganj *tahsīl* has a more than local reputation, as it is irrigated with brackish water, which improves the flavour. Indian hemp or *bhaṅg* (*Cannabis sativa*) is cultivated in a few villages.

Improvements in agricultural practice.

Cultivation has slightly decreased in area during the last thirty years, but has intensified in quality. The District is noted for its high standard of cultivation, chiefly in the hands of the Kurmīs and Kāchhīs. The best fields bear three crops in a year: maize in the rains, potatoes in the cold season, and tobacco in the spring. The two latter crops require rich manuring and plentiful irrigation, and are thus largely grown near towns. The cultivation near Farrukhābād and Kaimganj can hardly be excelled in the United Provinces. Loans under the Agriculturists' Loans Act are taken freely during adverse seasons; they amounted to a total of 1·3 lakhs between 1891 and 1900, but have now dropped to about Rs. 2,000 a year. The amounts advanced under the Land Improvement Loans Act are still smaller. Drainage works have been carried out in many parts of the District with good results.

Cattle, ponies, sheep, and goats.

There is no indigenous breed of cattle, and all the best animals are imported. Attempts to improve the breed have had no result so far. The ponies likewise are inferior. Sheep

and goats are bred locally, and are also imported from beyond the Jumna.

Irrigation.

The north and south of the District are fairly well supplied by canal-irrigation from branches of the Lower Ganges Canal, and a third branch irrigates a small area in the centre. Wells, however, are the principal source of irrigation, and in 1903–4 supplied 223 miles, while canals served only 105. The *jhīls* and rivers are used to an appreciable extent, serving 38 and 12 square miles respectively. Water is generally raised from wells in a leathern bucket worked by bullocks, but in low-lying tracts the lever (*dhenkli*) is used. In the case of *jhīls* and rivers, a closely-woven basket swung on ropes held by two or four men is the common form of lift.

Minerals.

Kankar is the only form of stone found, and it occurs in many parts of the District in both block and nodular forms. Saltpetre is manufactured to a considerable extent and exported.

Arts and manufactures.

Farrukhābād and Kanauj are celebrated for cloth printing applied to curtains, quilts, table-covers, and the like; but the industry is languishing at Kanauj. A European demand for the articles produced at Farrukhābād has recently sprung up. Farrukhābād is also a considerable centre for the manufacture of gold lace and of brass and copper vessels. Tents are made in the Central jail and by several private firms, and Kanauj is noted for the production of scent. There are a few indigo factories in the District, but the manufacture is declining. A flour-mill has recently been opened. The Government gun-carriage factory employed 795 hands in 1903, but has undertaken no new work since the completion of the Jubbulpore factory.

Commerce.

The chief exports are: tobacco, opium, potatoes, fruit, *bhang*, saltpetre, cotton-prints, scent, and brass and copper vessels; while the imports include grain, piece-goods, salt, timber, and metals. Tobacco, scent, and mangoes are largely exported to Central India and Rājputāna. The rest of the trade is chiefly local, and is carried on at small markets. Up to 1881 the want of railway communication affected the commerce of the District, which has revived considerably since.

Railways and roads.

Farrukhābād is fairly well supplied with means of communication, except in the Alīgarh *tahsīl*, which is often flooded. The Cawnpore-Achhnerā Railway passes through the length of the District near the Ganges, and a branch of the East Indian Railway from Shikohābād was opened in 1906. There are 142 miles of metalled roads, all maintained by the Public

Works department; the cost of half of these is, however, local, and 868 miles of unmetalled roads are also maintained by the District board. Avenues of trees have been planted along 118 miles. The grand trunk road passes through the southern half of the District with a branch to Farrukhābād city, which is continued to Shāhjahānpur and Bareilly. Another road gives communication with the north of the District.

Famine. The famine of 1783 doubtless affected this District, though it is not specially referred to in the accounts. In subsequent famines Farrukhābād suffered most in 1803–4, 1815–6, 1825–6, and 1837–8. In the latest of these, relief works on the modern system were started, especially along the grand trunk road. Distress was intense, and Brāhmans were seen disputing the possession of food with dogs, while mothers sold their children. Expenditure from Government funds amounted to 1·8 lakhs, and 6 lakhs of revenue was remitted. There was not much distress in 1860–1 or 1868–70, but in 1877–8 scarcity was severely felt. The southern part of the District was then the most precarious, and this is now the portion best protected by canals. In 1896–7 there was some distress; but it was not severe, and population increased during the decade, except in the Kanauj *tahsīl*.

District staff. Besides the Collector, the District staff usually includes one member of the Indian Civil Service and four Deputy-Collectors recruited in India. There is a *tahsīldār* at the head-quarters of each *tahsīl*. Other officials include an Executive Engineer of the Canal department, two opium officers, a salt officer, and the Superintendent of the District and Central jails.

Civil justice and crime. Civil work is disposed of by three District Munsifs, a Sub-Judge, and a District Judge, who also hears Sessions cases Crime is of the ordinary nature, but the District is subject to outbreaks of dacoity. Female infanticide was formerly very common, but few households are now under surveillance. Opium is largely grown in the District, and small portions of the drug are often retained by the cultivators for personal use or illicit sale.

Land revenue administration. The District was acquired in 1801 and 1802, and was at first administered by an Agent to the Governor-General, but a Collector was appointed in 1806. Early settlements were for short periods, and the collection of revenue gave much trouble, owing to the turbulence of the people, especially east of the Ganges. The first regular settlement was made about 1837, the demand being fixed at 12·9 lakhs; but this was

reduced in 1845 by 1·4 lakhs, owing to the effects of the famine of 1838. The next revision was made between 1866 and 1875, and is noteworthy for the improvements in procedure introduced by Mr. (now Sir Charles) Elliott, whose methods were copied in other Districts. The assessment was made on a valuation of the rental 'assets,' calculated by ascertaining standard rates for different classes of soil from rates actually paid. Each village was divided for this purpose into tracts of similar soil, instead of each field being separately classified. The estimated 'assets' were also checked by comparison with the actual rent-rolls. The revenue assessed was 12·5 lakhs. In the precarious tracts liable to flooding the demand broke down, and in 1890–2 reductions amounting to Rs. 62,000 were made. The latest revision was carried out between 1899 and 1903. Revenue was assessed on actual rent-rolls, checked and corrected, where necessary, by standard rates, and during settlement rents were enhanced by Rs. 63,000. About two-thirds of the tenants' holdings are protected by occupancy rights. The new demand amounts to 12·2 lakhs, representing 49 per cent. of the net 'assets.' The settlement was thus practically a redistribution, and the deteriorated tracts have been assessed lightly. The incidence of revenue is Rs. 1–4–0 per acre, varying from Rs. 1–5–0 in the high land to 8 annas in the alluvial tract. The total collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	12,29	11,19	11,59	12,18
Total revenue . .	15,54	17,06	18,74	19,72

Besides the municipality of FARRUKHĀBĀD *cum* FATEHGARH, seven towns are administered under Act XX of 1856. Outside these, local affairs are managed by the District board, which had an income of 1·3 lakhs in 1903–4, chiefly derived from rates. The expenditure was 1·5 lakhs, of which Rs. 81,000 was spent on roads and buildings. Local self-government.

There are eighteen police stations and one outpost in the District. The Superintendent of police had a force of 4 inspectors, 82 subordinate officers, and 410 constables in 1904, besides 230 municipal and town police, and 2,100 village and road police. At Fatehgarh there is a Central jail, besides the ordinary District jail. Police and jails.

Education. The District takes a medium position in the Provinces as regards literacy, and only 3 per cent. (5·4 males and 0·4 females) of the population could read and write in 1901. The number of public schools fell from 184 in 1880–1 to 156 in 1900–1; but the number of pupils rose from 5,294 to 7,271. In 1903–4 there were 233 public schools with 9,383 pupils, of whom 672 were girls, besides 41 private schools with 457 pupils. Four schools are managed by Government and 128 by the District or municipal boards. The total expenditure on education in the same year was Rs. 55,000, of which Rs. 37,000 was met from Local funds and Rs. 11,000 from fees.

Hospitals and dispensaries. There are nine hospitals and dispensaries, with accommodation for 112 in-patients. In 1903 the number of cases treated was 52,000, of whom 1,900 were in-patients, and 4,500 operations were performed. The total expenditure was Rs. 14,500, chiefly met from Local funds.

Vaccination. About 22,300 persons were successfully vaccinated in 1903–4, representing 24 per 1,000 of the population—a low proportion. Vaccination is compulsory only in the municipality and the cantonment.

[W. Irvine, 'The Bangash Nawābs of Farrukhābād,' *Journal of the Bengal Asiatic Society* (1878, p. 260); *District Gazetteer* (1884, under revision); H. J. Hoare, *Settlement Report* (1903).]

Kanauj Tahsīl (*Kannauj*).—South-eastern *tahsīl* of Farrukhābād District, United Provinces, conterminous with the *pargana* of the same name, lying along the Ganges, between 26° 56′ and 27° 12′ N. and 79° 43′ and 80° 1′ E., with an area of 181 square miles. Population decreased from 117,229 in 1891 to 114,215 in 1901. There are 206 villages and one town, KANAUJ (population, 18,552). The demand for land revenue in 1903–4 was Rs. 1,95,000, and for cesses Rs. 31,000. The density of population, 631 persons per square mile, is above the District average. The *tahsīl* consists of two parts: the uplands or *bāngar*, and the lowlands near the Ganges, or *kachohā*, the former covering the larger area. The Kālī Nadī (East) crosses the *tahsīl* and joins the Ganges. In 1903–4 the area under cultivation was 124 square miles, of which 43 were irrigated. Irrigation is supplied almost entirely from wells, and the tract is liable to suffer in dry seasons. This was the only *tahsīl* in the District which lost in population between 1891 and 1901.

Tirwā Tahsīl.—Southern *tahsīl* of Farrukhābād District, United Provinces, comprising the *parganas* of Tirwā, Saurikh, Sakatpur, and Sahrāwā, and lying between 26° 46′ and 27° 5′ N. and 79° 19′ and 79° 58′ E., with an area of 380 square miles.

It is bounded on the north by the Isan, and the Arind and Pāndū rivers form part of its southern boundary. Population increased from 168,673 in 1891 to 180,086 in 1901. There are 256 villages and two towns, the larger being TIRWĀ, the *tahsīl* head-quarters (population, 5,763). The demand for land revenue in 1903-4 was Rs. 2,53,000, and for cesses Rs. 45,000. The density of population, 474 persons per square mile, is below the District average. The *tahsīl* consists of a central table-land of fertile loam, through the centre of which passes the Cawnpore branch of the Lower Ganges Canal, flanked by sandy tracts sloping down to the rivers north and south. In the north are found numerous swamps and small lakes, but drainage operations have improved this area considerably. Rice is grown more extensively in this *tahsīl* than elsewhere in the District. In 1903-4 the area under cultivation was 197 square miles, of which 101 were irrigated, canals and wells serving an equal area. Tanks and small streams supply 7 or 8 square miles.

Chhibrāmau Tahsīl.—South central *tahsīl* of Farrukhābād District, United Provinces, comprising the *parganas* of Chhibrāmau and Tālgrām, and lying between 26° 58′ and 27° 14′ N. and 79° 23′ and 79° 47′ E., with an area of 240 square miles. It is bounded by the rivers Kālī Nadī (East) and Ganges on the north, and by the Isan on the south. Population increased from 111,114 in 1891 to 126,705 in 1901. There are 240 villages and two towns: CHHIBRĀMAU (population, 6,526), the *tahsīl* head-quarters, and TĀLGRĀM (5,457). The demand for land revenue in 1903-4 was Rs. 1,90,000, and for cesses Rs. 32,000. The density of population, 528 persons per square mile, is almost the same as the District average. In the centre of the *tahsīl* there is a level stretch of fertile loam, crossed from north to south in the west by a ridge of sandy soil, and with sandy slopes approaching the alluvial soil on the banks of the rivers. The eastern portion is remarkable for the large area covered by swamps and lakes. The area under cultivation in 1903-4 was 160 square miles, of which 64 were irrigated. The Bewar branch of the Lower Ganges Canal supplies about 14 square miles in the west of the *tahsīl*, and wells most of the remainder, but tanks or *jhīls* irrigate 4 or 5 square miles. In several villages *bhang* (Indian hemp) is cultivated.

Farrukhābād Tahsīl.—Head-quarters *tahsīl* of Farrukhābād District, United Provinces, comprising the *parganas* of Bhojpur, Muhammadābād, Pahāra, and Shamsābād East, and lying between 27° 9′ and 27° 28′ N. and 79° 15′ and 79° 44′ E., with an area of 339 square miles. It is bounded on the east

by the Ganges and on the south by the Kālī Nadī (East). Population increased from 244,896 in 1891 to 250,352 in 1901. There are 387 villages and one town, FARRUKHĀBĀD *cum* FATEHGARH (population, 67,338), the *tahsīl* and District head-quarters. The demand for land revenue in 1903-4 was Rs. 2,55,000, and for cesses Rs. 48,000. The density of population, 739 persons per square mile, is the highest in the District. Excepting a small tract of alluvial land near the Ganges, the whole *tahsīl* lies on the uplands, sloping down on the south to the basin of the Kālī Nadī. Through the north-east corner flows the small river Bagār, whose bed has been deepened and straightened to improve the drainage. Immediately above the Ganges, and especially round Fatehgarh, some of the finest cultivation in the District is to be found. Here a treble crop of maize, potatoes, and tobacco is often raised, while fine groves of mango trees produce a plentiful supply of fruit, which is largely exported. In 1903-4 the area under cultivation was 223 square miles, of which 81 were irrigated. The Fatehgarh branch of the Lower Ganges Canal serves a small area, but wells are the chief source of irrigation.

Kaimganj Tahsīl.—North-western *tahsīl* of Farrukhābād District, United Provinces, comprising the *parganas* of Kampil and Shamsābād West, and lying along the southern bank of the Ganges, between 27° 21′ and 27° 43′ N. and 79° 8′ and 79° 37′ E., with an area of 363 square miles. Population increased from 143,557 in 1891 to 168,606 in 1901. There are 397 villages and two towns: KAIMGANJ (population, 10,369), the *tahsīl* head-quarters, and SHAMSĀBĀD (8,375). The demand for land revenue in 1903-4 was Rs. 2,10,000, and for cesses Rs. 36,000. The density of population, 464 persons per square mile, is below the District average. The *tahsīl* contains a larger tract of lowland than any other in the District except Alīgarh; but the greater part of it is situated in the uplands. The Bagār river winds through the southern portion, and on either bank stretches a wide expanse of sandy land, which extends on the north to near Kampil. North and west of this is a belt of fine yellowish loam, tilled by Kurmīs, and famous for its sugar-cane, and near the towns of Kampil, Kaimganj, and Shamsābād for its tobacco, which acquires a special flavour from the brackish water of the wells. The area under cultivation in 1903-4 was 226 square miles, of which 72 were irrigated. The Fatehgarh branch of the Lower Ganges Canal supplies irrigation through the centre of the uplands, and the area irrigated from canals is slightly larger than that supplied by wells. There are several

considerable swamps, from which water is also taken; but a good deal has been done to improve the drainage.

Alīgarh Tahsīl.—North-eastern *tahsīl* of Farrukhābād District, United Provinces, comprising the *parganas* of Amritpur, Paramnagar, and Khākhatmau, and lying between 27° 14′ and 27° 40′ N. and 79° 32′ and 79° 45′ E., with an area of 182 square miles. Population increased from 73,218 in 1891 to 85,848 in 1901. There are 203 villages, but no town. Alīgarh, the *tahsīl* head-quarters, is a small village. The demand for land revenue in 1903–4 was Rs. 1,18,000, and for cesses Rs. 19,000. The density of population, 472 persons per square mile, is below the District average. The *tahsīl* is a damp alluvial tract, lying along the left bank of the Ganges, and crossed by the Rāmgangā, which has an erratic course, changing almost every year. After heavy rains a large portion is under water, and several channels connect the two rivers. In 1903–4 the area under cultivation was 111 square miles, of which 17 were irrigated. The wells are usually small shallow pits, from which water is raised in an earthen pot tied to a lever (*dhenklī*). Where floods are not feared, sugar-cane and poppy are largely grown.

Chhibrāmau Town.—Head-quarters of the *tahsīl* of the same name in Farrukhābād District, United Provinces, situated in 27° 9′ N. and 79° 31′ E. It lies on the grand trunk road, and is connected by an unmetalled road with Farrukhābād city. Population (1901), 6,526. The early history of the town is legendary, but by the time of Akbar it was the head-quarters of a *pargana*. Nawāb Muhammad Khān of Farrukhābād, early in the eighteenth century, founded a new quarter called Muhammadganj, with a fine *sarai* which was improved 100 years later by a British Collector. The town prospered by its situation on the grand trunk road. It is administered under Act XX of 1856, with an income of about Rs. 1,100. It contains a *tahsīlī* and dispensary. A market is held twice a week. The town school has 120 pupils, and two primary schools 57.

Farrukhābād City.—Town which gives its name to Farrukhābād District, United Provinces, situated in 27° 24′ N. and 79° 34′ E., 769 miles by rail from Calcutta and 924 miles from Bombay. It lies near the Ganges, at the terminus of a branch of the East Indian Railway from Shikohābād, and also on the Cawnpore-Achhnerā Railway, and on a branch of the grand trunk road. The head-quarters of the District and the cantonment are at FATEHGARH, 3 miles east, and the two towns form a single municipal area. Population is decreasing. At

the last four enumerations the number of inhabitants was as follows: (1872) 79,204, (1881) 79,761, (1891) 78,032, and (1901) 67,338. The population of Farrukhābād alone was 51,060 in 1901. Out of the total, Hindus numbered 47,041 and Musalmāns 19,208.

Farrukhābād was founded about 1714 by Nawāb Muhammad Khān, and named after the emperor Farrukh Siyar. Its history has been related in that of the District. The town is surrounded by the remains of a wall which encloses a triangular area. The houses and shops are well built, and often adorned with beautifully carved wooden balconies. Near the northern boundary is situated a high mound on which stood the Nawāb's palace, but its place has been taken by the town hall and *tahsīlī*. The streets are fairly broad and often shaded by trees. There are, however, few buildings of much pretension, the District school being perhaps the finest. North of the city lie the tombs of the Nawābs, chiefly in a ruinous state. The town contains a dispensary and a female hospital.

The municipality was constituted in 1864. During the ten years ending 1901 the income averaged Rs. 57,000, and the expenditure Rs. 56,000. In 1903-4 the income was Rs. 70,000, chiefly derived from octroi (Rs. 57,000); and the expenditure was Rs. 93,000, including a drainage scheme (Rs. 38,000), conservancy (Rs. 13,000), public safety (Rs. 15,000), and administration and collection (Rs. 8,000). The drainage scheme, which has been financed from savings, is to cost about a lakh.

For many years after annexation the trade of Farrukhābād was considerable, owing to its position near the Ganges and the grand trunk road, but the opening of the East Indian Railway diverted commerce. At present there is some manufacture of gold lace and of brass and copper vessels, and the calico-printing industry is gaining a more than local celebrity. The latter is chiefly in the hands of Sādhs, a kind of Hindu Quakers. A flour-mill has recently been started. There is also a considerable export of potatoes, tobacco, and mangoes. The high school contained 164 pupils in 1904; the American Presbyterian Mission school, 217; and the town or middle school, 113. There are also several primary schools.

Fatehgarh.—Head-quarters of Farrukhābād District, United Provinces, situated in 27° 24′ N. and 79° 35′ E., on a branch of the grand trunk road, and on the Cawnpore-Achhnerā Railway. Population (1901), 16,278. The fort was built by Nawāb Muhammad Khān about 1714, but first became of importance in 1751, when Nawāb Ahmad Khān was besieged in

it by the Marāthās. In 1777 this was chosen as one of the stations for the brigade of troops lent to the Nawāb of Oudh, but it did not pass into the possession of the British till 1802, when it became the head-quarters of an Agent to the Governor-General. In 1804 Holkar reached Fatehgarh in his raid through the Doāb, but was surprised and put to precipitate flight by Lord Lake. When the Mutiny broke out in 1857, a few of the European residents fled early in June to Cawnpore, where they were seized by the Nāna and massacred. Those who remained behind, after sustaining a siege of upwards of a week, were forced to abandon the fort, which had been undermined by the rebels, and to betake themselves to boats. On their way down the Ganges, they were attacked by the rebels and villagers on both sides of the river. One boat reached Bithūr, where it was captured; the occupants were taken prisoners to Cawnpore and subsequently massacred. Another boat grounded in the river the day after leaving Fatehgarh, and all the passengers but three were shot down or drowned in their attempt to reach land. A number of the refugees were brought back to Fatehgarh, and, after being kept in confinement for nearly three weeks, were shot or sabred on the parade-ground; their remains were cast into a well over which has been built a monument, with a memorial church near it. The fort lies near the Ganges at the north of the station. From 1818 it was used as a gun-carriage factory, but since 1906 it has been converted into an army clothing dépôt. Near it stand the barracks of the British and native infantry garrison, partly occupied at present by a mounted infantry class. The rest of the cantonment and the civil station lie along the high bank of the river separating the native town from the Ganges.

The municipal accounts are kept jointly with those of FARRUKHĀBĀD CITY, which lies three miles away. The cantonment had a population of 4,060 in 1901, and the annual income and expenditure of cantonment funds are each about Rs. 8,000. Trade is almost entirely local, but tents are made in three private factories and in the Central jail. The gun-carriage factory employed 795 hands in 1903. A middle school has 143 pupils, and there are several primary schools, including one in the gun-carriage factory, a girls' school, and a school for European and Eurasian children.

Kaimganj Town.—Head-quarters of the *tahsīl* of the same name in Farrukhābād District, United Provinces, situated in 27° 30′ N. and 79° 21′ E., on the Cawnpore-Achhnerā Railway, and also at the terminus of a metalled road from

Farrukhābād city. Population (1901), 10,369. It was founded in 1713 by Muhammad Khān, first Nawāb of Farrukhābād, who named it after his son, Kaim Khān. It is the centre of a group of villages inhabited by a colony of Pathāns who settled here early in the seventeenth century. The best known of these villages is Mau Rashīdābād, now a great tobacco field, about a mile north of Kaimganj. The Pathāns of this neighbourhood are still noted for the number of men they supply to the native army. In 1857 the *tahsīlī* was ineffectually besieged for a time by a band of fugitive insurgents from Kālpī. The town consists chiefly of a wide metalled bazar, about a mile long, from which branch many narrow unmetalled lanes. It contains a *tahsīlī*, *munsifī*, and dispensary. Kaimganj is administered under Act XX of 1856, with an income of about Rs. 2,000. There is a considerable trade in tobacco, which is largely grown in the neighbourhood. The old manufacture of swords and matchlocks has dwindled down to a trade in ordinary knives and betel-nut cutters. The town school has 193 pupils, and three primary schools 63.

Kampil.—Village in the Kaimganj *tahsīl* of Farrukhābād District, United Provinces, situated in 27° 35′ N. and 79° 14′ E., 28 miles north-west of Fatehgarh. Population (1901), 2,366. Kampil is mentioned in the Mahābhārata as the capital of South PANCHĀLA, under king Drupada. Here his daughter, Draupadī, married the five Pāndava brethren. The villagers still show the mound where the Rājā's castle stood, and the place, a few miles away, where the *swayamvara*, or ceremony at which Draupadī chose her husband, took place. At the end of the thirteenth century, Kampil appears as a nest of highway robbers, against whom the emperor Ghiyās-ud-dīn Balban marched a force in person, and built here a fort. The town and its vicinity constantly gave trouble in later years, but the Rāthor inhabitants were gradually suppressed. West of the town stretches a long series of ruins in which ancient coins are found. There are a fine Jain temple and a primary school with about 60 pupils.

Kanauj Town (*Kannauj*).—Ancient city in Farrukhābād District, United Provinces, situated in 27° 3′ N. and 79° 56′ E., two miles from the grand trunk road and the Cawnpore-Achhnerā Railway, and close to the Kālī Nadī (East). The Ganges once flowed below its walls, but is now some miles away. Population (1901), 18,552. The town finds no mention in the Mahābhārata, but the legend of its foundation is given

in the Rāmāyana. Kusīnābha, the founder, had a hundred daughters, all but the youngest of whom scorned the hermit, Vāyu. In revenge he cursed them and their backs became humped, whence the city was called Kānya-kubja or 'the crooked maiden.' Early in the Christian era Ptolemy refers to Kanauj as *Kanogiza*. The town was included in the Gupta dominions in the fifth century, and when the Gupta empire fell to pieces it became the capital of the Maukharīs, one of the petty dynasties which arose in its place. In the sixth century it suffered from war with the White Huns and their ally, the king of Mālwā; but early in the seventh century it was included in the great empire of Harshavardhana in Northern India. The Chinese pilgrim, Hiuen Tsiang, who visited this monarch and travelled with him from Allahābād to Kanauj, describes the magnificence of his court. Harshavardhana's death was the signal for anarchy, and the detailed history of the following years is unknown. In the latter half of the ninth century a dynasty of Raghuvansi kings reigned from Kanauj, which was also called Mahodayā, over an extensive dominion. One of these kings was defeated in 917 by the king of Gujarāt, but restored by the Chandel king of Mahobā. In 1019 Mahmūd of Ghazni plundered Kanauj, which now came into the power of the Rāthors, the most celebrated of whom was Gobind Chand (1115–55). Nearly 200 years later, in 1194, Muhammad Ghorī defeated Jai Chand, the last of the Rāthor kings, and the great kingdom of Kanauj came to an end. Under the Muhammadans Kanauj became the seat of a governor, but lost its old importance. In the fifteenth century it was included for some years in the Sharki kingdom of Jaunpur; and when Mahmūd, son of Fīroz Tughlak, lost his hold on Delhi, he resided here for a time. It was close to Kanauj, though across the Ganges in Hardoī District, that Humāyūn was defeated by Sher Shāh. Under Akbar, when order had once been restored, Kanauj entered on a long period of peace, and it is recorded in the *Ain-i-Akbarī* as the head-quarters of a *sarkār*. During the eighteenth century it belonged sometimes to the Nawābs of Farrukhābād, again to the Nawābs of Oudh, and at times to the Marāthās. The town or kingdom of Kanauj has given its name to an important division of Brāhmans, and to many subdivisions of lower castes. Of the Hindu buildings which must have graced the place, nothing remains intact. The fine Jāma Masjid, built in 1406 by Ibrāhīm Shāh of Jaunpur, was constructed from Hindu temples, and the site is still known

to Hindus as *Sītā kī rasoi*, or 'Sitā's kitchen.' There are many tombs and shrines in the neighbourhood, the most notable being those of Makhdūm Jahāniyā south-east of the town, and of Makhdūm Akhai Jamshīd three miles away, both dating from the fifteenth century. The most conspicuous buildings are, however, the tombs of Bālā Pīr and his son, Shaikh Mahdī, religious teachers who flourished under Shāh Jahān and Aurangzeb. The neighbourhood for miles along the river is studded with ruins, which have not been explored. The town lies on the edge of the old high bank of the Ganges, and, but for the high mounds and buildings described above, is not distinguishable from many towns of similar size. The houses are fairly well built but small, and the most conspicuous modern building is a fine *sarai* recently completed. The dispensary, *tahsīlī*, and *munsifī* are at Sarai Mīrān, two miles south of Kanauj. The town is administered under Act XX of 1856, with an income of about Rs. 4,000. It is famous for its scent distilleries, where rose-water, otto of roses, and other perfumes are produced, which have a great reputation. Calico-printing is also carried on, but is not so important an industry here as in Farrukhābād city. There was formerly a small manufacture of country paper, and a cotton gin has been worked at intervals in the last few years. The town school has 113 pupils and two primary schools 96. There is also a flourishing aided school, housed in a fine building.

Sankīsā.—Village in the District and *tahsīl* of Farrukhābād, United Provinces, situated in 27° 20′ N. and 79° 16′ E., near the Kālī Nadī (East). Population (1901), 951. The village is also called Sankīsā Basantpur, and is chiefly celebrated for the ruins situated in it. These were identified by Cunningham with the site of the capital of the country called Sankāsya by Fa Hian and Kapithā by Hiuen Tsiang. This town was said to be the place at which Gautama Buddha descended from heaven, accompanied by Indra and Brahmā. The identification depends chiefly on measurements and directions which are not perfectly definite, and its correctness has been doubted[1]. The existing village is perched on a mound of ruins, locally known as 'the fort,' 41 feet high, with a superficial extent of 1,500 feet by 1,000. A quarter of a mile southward is another mound, composed of solid brickwork, and surmounted by a temple dedicated to Bisāri Devī. Near the temple mound Cunning-

[1] V. A. Smith in the *Journal of the Royal Asiatic Society*, 1898, p. 508, *note*.

ham found the capital of an ancient pillar, bearing an erect figure of an elephant, which he considered to belong to the pillar of Asoka mentioned by the Chinese pilgrims. The latter describe the pillar as surmounted by a lion—a discrepancy explained away by supposing that the trunk had been broken at an early date, and the animal could not be distinguished at a height of 50 feet. Other smaller mounds containing masses of brickwork surround those mentioned, and there are the remains of an earthen rampart upwards of 3½ miles in circumference. This place has been very imperfectly explored, but ancient coins and clay seals bearing the Buddhist confession of faith are frequently found here.

[Cunningham, *Archaeological Survey Reports of Northern India*, vol. i, p. 271, and vol. xi, p. 22.]

Shamsābād Town.—Town in the Kaimganj *tahsīl* of Farrukhābād District, United Provinces, situated in 27° 32′ N. and 79° 28′ E., on an unmetalled road 18 miles north-west of Farrukhābād, and also on a branch of the metalled road to Kaimganj. Population (1901), 8,375. An old town called Khor was founded on the cliff of the Ganges three miles away, at the beginning of the thirteenth century, by a Rāthor descended from Jai Chand, last king of Kanauj. About 1228 Shams-ud-dīn Altamsh came down the Ganges, which then flowed under the cliff, and expelled the Rāthors, founding Shamsābād in his own name. The Rāthors returned to Khor, however, and later took Shamsābād, and often rebelled against Muhammadan rule. In the contest between Delhi and Jaunpur the Rājās of Khor or Shamsābād supported the emperor and were finally driven out by the Jaunpur kings. Only the mound where the fort stood remains of old Shamsābād, and the new town was founded about 1585. In the Mutiny of 1857 a European planter lost his life here. The place has now decayed, and is divided into scattered groups of houses by patches of cultivation. The principal thoroughfare is a long paved street, with a small grain market opening into a larger market-place. Shamsābād is administered under Act XX of 1856, with an income of about Rs. 1,200. Trade suffered by the alignment of the metalled road and railway, which left the town some distance away, and the old manufacture of fine cloth has died out. There is, however, a small export of potatoes and tobacco. The town school has 177 pupils.

Tālgrām ('village of tanks').—Town in the Chhibrāmau *tahsīl* of Farrukhābād District, United Provinces, situated in 27° 2′ N. and 79° 39′ E., 24 miles south of Fatehgarh. Population

(1901), 5,457. Tālgrām was the chief town of a *pargana* under Akbar, and from annexation to 1844 it was the head-quarters of a *tahsīl.* It is administered under Act XX of 1856, with an income of Rs. 600. Trade is local. There are two schools with 150 pupils.

Tirwā Town.—Head-quarters of the *tahsīl* of the same name in Farrukhābād District, United Provinces, situated in 26° 58′ N. and 79° 48′ E., 25 miles south-east of Fatehgarh. Population (1901), 5,763. The town is in two portions, three-quarters of a mile apart, Tirwā proper being the agricultural, and Ganj Tirwā the business and official quarter. The former contains a fine castle, the residence of the Rājā of Tirwā, who has a large estate in the neighbourhood. Attached to the fort are a handsome tank and temple constructed by a former Rājā. Ganj Tirwā is administered under Act XX of 1856, with an income of about Rs. 900. It has a flourishing local trade, and contains the *tahsīlī* and a dispensary. Two schools are attended by 152 pupils.

Boundaries, configuration, and river system.

Mainpurī District.—District in the Agra Division, United Provinces, lying between 26° 53′ and 27° 31′ N. and 78° 27′ and 79° 26′ E., with an area of 1,675 square miles. It is bounded on the north by Etah; on the east by Farrukhābād; on the south by Etāwah and Agra; and on the west by Agra and Etah. The whole District forms a level plain, and variations in its physical features are chiefly due to the rivers which flow across it or along its boundaries, generally from north-west to south-east. The Jumna, which forms part of the southern boundary, is fringed by deep ravines, extending two miles from the river, incapable of cultivation, but affording good pasturage for cattle, as well as safe retreats for the lawless herdsmen or Ahīrs. North-east flow, in succession, the Sirsā, the Agangā, the Sengar, the Arind or Rind, the Isan, and the Kālī Nadī (East), which last forms the greater part of the northern boundary. A well-defined sandy ridge lies in the west of the District, and a range of sandhills follows the course of the Kālī Nadī, a little inland. Shallow lakes or marshes abound over the whole area, but are most common in the central table-land, in which are many large stretches of barren soil called *ūsar*.

Geology.

The soil consists entirely of Gangetic alluvium; but *kankar* is abundant, both in nodular and block form. Saline efflorescences occur in many parts.

Botany.

The flora presents no peculiarities. The District is well wooded, and extensive groves of mango and *shīsham* (*Dalbergia Sissoo*) abound. The great *dhāk* jungles (*Butea frondosa*)

which formerly studded the District have been largely cut away. *Babūl* (*Acacia arabica*) is common. The weed *baisurī* (*Pluchea lanceolata*) is a pest in the west, and *kāns* (*Saccharum spontaneum*) is sometimes troublesome in the sandy soil to the north-east.

Fauna. There are few wild animals in the District. Antelope occur in some numbers, and *nīlgai* in the *dhāk* jungles. Leopards and hyenas are found in the Jumna ravines, and wolves everywhere. Pigeons, water-fowl, and quail are common. Fish are plentiful, and the right of fishing in the rivers and tanks is often valuable.

Climate and rainfall. The climate of Mainpurī is that of the Doāb generally. It is hot, but not excessively sultry during the summer months. The annual rainfall averages 31 inches, and the tract near the Jumna receives slightly more than the rest. Variations from year to year are considerable.

History and archaeology. Nothing definite is known of the early history of Mainpurī, though mounds concealing ancient ruins are common. A few places are, as usual, connected with episodes in the Mahābhārata. The first precise notice of the District, however, is found in the records of its Muhammadan invaders. In 1194 Rāprī was made the seat of a Musalmān governor, and continued to be the local head-quarters under many successive dynasties. During the vigorous rule of Sultān Bahlol (1450–88) Mainpurī and Etāwah formed a debatable ground between the powers of Delhi and Jaunpur, to both of which they supplied mercenary forces. After the firm establishment of the Lodī princes, Rāprī remained in their hands until the invasion of the Mughals. Bābar occupied it in 1526, and Etāwah also came into his hands without a blow. Rāprī was wrested from the Mughals for a while by the Afghān, Kutb Khān, son of Sher Shāh, who adorned it with many noble buildings, the remains of which still exist. On the return of Humāyūn, the Mughals once more occupied Mainpurī. Akbar included it in the *sarkārs* of Kanauj and Agra. The same vigorous ruler also led an expedition into the District for the purpose of suppressing the robber tribes by whom it was infested. During the long ascendancy of the line of Bābar the Musalmāns made little advance in Mainpurī. A few Muhammadan families obtained possessions in the District, but a very small proportion of the natives accepted the faith of Islām. Under the successors of Akbar Rāprī fell into comparative insignificance, and the surrounding country became subordinate to Etāwah.

Like the rest of the Central Doāb, Mainpurī passed towards

the end of the eighteenth century into the power of the Marāthās, and finally became a portion of the province of Oudh. When the region was ceded to the British by the Nawāb of Oudh in 1801, Mainpurī became the head-quarters of the extensive District of Etāwah. With the exception of a raid by Holkar in 1804, which was repulsed by the provincial militia, there are no events of importance to recount during the early years of British supremacy. Its unwieldy size was gradually reduced by the formation of Etah and Etāwah as separate Districts. The construction of the Ganges Canal was the only striking event between the cession and the Mutiny of 1857.

News of the massacre at Meerut reached Mainpurī on May 12; and on the 22nd, after tidings of the Alīgarh revolt had arrived at the station, the 9th Infantry broke into open mutiny. The few Europeans at Mainpurī gallantly defended the town till the 29th, when the arrival of the Jhānsi rebels made it necessary to abandon the District entirely. The Magistrate and his party were accompanied as far as Shikohābād by the Gwalior troopers, who then refused to obey orders, but quietly rode off home without molesting their officers. The fugitives reached Agra in safety. Next day the Jhānsi force attacked the town, but was beaten off by the well-disposed inhabitants. The District remained in the hands of the rebel Rājā of Mainpurī, who held it till the reoccupation, when he quietly surrendered himself, and order was at once restored.

The people.

There are 8 towns and 1,380 villages. Population has fluctuated during the last thirty years. Between 1881 and 1891 excessive floods threw much land out of cultivation; but the seasons in the following decade were more favourable. The number of inhabitants at the last four enumerations was: (1872) 765,845, (1881) 801,216, (1891) 762,163, and (1901) 829,357. The density of population is below the average of the western plain. The District is divided into five *tahsīls*—MAINPURĪ, BHONGAON, KARHAL, SHIKOHĀBĀD, and MUSTAFĀBĀD—the head-quarters of which (except that of Mustafābād, which is at Jasrāna) are at places of the same names. The principal town is the municipality of MAINPURĪ. The table on the next page gives the chief statistics of population in 1901.

About 93 per cent. of the population are Hindus, and less than 6 per cent. Musalmāns, a very low proportion for the United Provinces. Western Hindī is spoken almost universally, the prevailing dialect being Braj.

[C]astes and

The most numerous Hindu castes are Ahīrs (graziers and

cultivators), 143,000; Chamārs (tanners and labourers), 107,000; Kāchhīs (cultivators), 68,000; Brāhmans, 68,000; and Rājputs, 68,000. Among Musalmāns the chief tribes or castes are Shaikhs, 8,100; Pathāns, 6,600; Fakīrs, 5,700; and Behnas (cotton-carders), 5,200. Agriculture supports 70 per cent. of the population, a high proportion; general labour 6 per cent., and personal service 6 per cent. occupations.

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Mainpurī . .	386	3	249	183,180	475	+ 7.0	5,327
Bhongaon . .	459	1	390	226,940	494	+ 16.2	5,832
Karhal . .	218	1	189	98,398	451	− 1.9	2,386
Shikohābād .	294	2	287	157,659	536	+ 12.5	3,792
Mustafābād .	318	1	265	163,180	513	+ 5.1	2,241
District total	1,675	8	1,380	829,357	495	+ 8.8	19,578

Christian missions. There were only 308 native Christians in 1901, of whom 196 were Methodists and 45 Presbyterians. The American Presbyterian Church commenced work here in 1843.

General agricultural conditions. The District is divided by its rivers into three tracts of varying qualities. On the north-east the area between the Isan and the Kālī Nadī is composed of light sandy soil called *bhūr*, with here and there loam, especially near the west, where these two rivers are farthest apart. Between the Isan and Sirsā lies the garden of the District, a rich tract of fertile loam, interspersed with many shallow lakes, patches of barren *ūsar* land, and occasional jungle. The third tract, commencing a little south of the Sengar, has some sandy stretches, but is much better than the north-eastern tract, and as far as the Sirsā it is little inferior to the central tract. South of the Sirsā the soil deteriorates; there are no *jhīls* and no *ūsar*; the land is not so rich, and irrigation is scantier, the water-level sinking rapidly as the Jumna ravines are approached.

Chief agricultural statistics and principal crops. The District contains the usual tenures of the Provinces, but *zamīndāri* and *pattīdāri* are more common than *bhaiyāchārā mahāls*. There is one large *talukdāri* estate belonging to the Rājā of MAINPURĪ, which is described separately. The main agricultural statistics are given on the next page, in square miles.

The chief food-crops, with the area under each (in square miles), are: wheat (220), *jowār* (122), barley (110), *bājra*

(100), and gram (90). Poppy and cotton are the most important non-food crops, covering 28 and 39 square miles respectively.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Mainpurī . . .	386	179	152	50
Bhongaon . .	459	260	205	61
Karhal . . .	218	110	101	27
Shikohābād . .	294	196	160	44
Mustafābād . .	318	181	101	26
Total	1,675	926	719	208

NOTE.—These figures are for various years from 1900 to 1903, later figures not being available.

Improvements in agricultural practice.

No improvements can be noted in agricultural practice except the increase in the area double cropped, and in the area under wheat, maize, and poppy. A steady demand exists for advances under the Agriculturists' and Land Improvement Loans Acts, which aggregated 1·3 lakhs during the ten years ending 1900. One-third of this sum was advanced in the famine year 1896–7. The loans in 1903–4 amounted to Rs. 4,500. In the central and part of the south-western tract drainage was defective and has recently been improved, especially in the latter, where the Bhognīpur branch of the Lower Ganges Canal had caused some obstruction.

Cattle, horses, sheep, and goats.

The cattle are of the ordinary inferior type, though a little success has been achieved in improving the strain by imported bulls. Something has also been done to improve the breed of horses, and stallions have been kept here for many years. In 1870 an attempt was made, without success, to improve the breed of sheep. The best goats are imported from west of the Jumna. Sirsāganj is the great cattle market.

Irrigation.

Mainpurī is well supplied by canal-irrigation in almost every portion, and 900 square miles are commanded. In the latest years for which statistics are available, out of 719 square miles irrigated canals supplied 266. The central tract is served by the Cawnpore and Etāwah branches of the Lower Ganges Canal, which originally formed part of the Upper Ganges Canal. The tract north-east of the Isan is served by the Bewar branch, and part of that south-west of the Sengar and Sirsā by the Bhognīpur branch. The last tract is perhaps that in which irrigation is most defective. Wells supplied 396 square miles, and other sources, chiefly small streams, 57. Towards the Jumna, and in the sandy tracts, wells cannot be constructed easily.

Kankar is found abundantly in both block and nodular form. The only other mineral product of the District is saltpetre, which is largely manufactured from saline efflorescences. Minerals.

The District has few arts or manufactures. Glass bangles are made from *reh*. Wood-carving was once popular in many parts, including a peculiar variety in which the wood is inlaid with brass or silver wire. There is one cotton gin at Shikohābād, another was recently built at Mainpurī, and a third is working at Sirsāganj. Indigo is still made in twenty-three factories, which employ about 1,000 hands. Arts and manufactures.

The chief exports are wheat and other grains, oilseeds, hides, and cotton; and the imports are salt, metals, piece-goods, sugar, tobacco, and rice. The trade is largely with Cawnpore, but sugar comes from Rohilkhand and tobacco from Farrukhābād. Some traffic is carried by the canal. Commerce.

The East Indian Railway crosses the south-western corner, and a branch line, recently constructed, connects Shikohābād with Mainpurī and Farrukhābād, thus traversing the District from west to east. There are 197 miles of metalled and 200 miles of unmetalled roads. The Public Works department is in charge of the former; the cost of all but 83 miles of the metalled and of all the unmetalled roads is met from Local funds. Avenues of trees are maintained on 102 miles. Few Districts in the Provinces are so well supplied with roads, and only in the south-west are communications defective. The grand trunk road passes through the north-west, with a branch to Agra through Mainpurī town, which is also connected by metalled roads with the surrounding Districts. Railways and roads.

Mainpurī suffered severely in 1837–8, when extensive remissions of revenue were necessary, but nothing more was done to relieve distress. In 1860–1 relief works were opened and 4,000 able-bodied persons worked daily, besides 4,600 who received gratuitous relief. In 1868 the situation was saved by timely rain, and grain was actually exported. Distress was felt in 1877–8, especially in the south-west of the District, where canal-irrigation was not available, and relief works had to be opened. In 1896–7 prices were high, but 2,000 temporary wells were made from Government advances, besides 12,000 constructed from private capital, and distress was confined to the immigrants from Rājputāna. A test work attracted only a daily average of 100 persons. The four branches of the canal now make the District practically immune. Famine.

The ordinary District staff includes the Collector, and four Deputy-Collectors recruited in India. There is a *tahsīldār* at District staff.

the head-quarters of each *tahsīl*. Mainpurī is also the head-quarters of an Executive Engineer in charge of a division of the Lower Ganges Canal, and of an officer of the Opium department.

Civil justice and crime.

There are two regular Munsifs. The District and Sessions Judge of Mainpurī and the Sub-Judge exercise jurisdiction also over Etāwah District. Crime is of the usual nature, but outbreaks of dacoity are frequent. Cattle-theft is not uncommon, and offences against the opium law are numerous. Mainpurī has long held a bad reputation for female infanticide, and 21,082 persons were still under surveillance in 1904, by far the largest number in any District of the United Provinces.

Land revenue administration.

In 1801 Mainpurī became the head-quarters of the District of Etāwah, which then included, besides the present District, parts of Farrukhābād, Agra, Etah, and Etāwah. In 1803 large additions were made, and in 1824 four subdivisions were formed, the Mainpurī portion remaining under the Collector of Etāwah, who still resided at Mainpurī. The District began to take its present form in 1837. Early settlements were for short periods, and were based on the records of previous collections and on a system of competition, preference, however, being given to the hereditary *zamīndārs*, if they came forward. The first regular settlement was made in 1839–40, when a revenue of 12·5 lakhs was fixed. This assessment was, as it turned out, excessive, owing to the failure to allow for the after-effects of the famine of 1837–8; and it was reduced in 1845–6 to 10·5 lakhs, rising gradually to 11·4 lakhs in 1850–1. The next settlement was made between 1866 and 1873. Soils were marked off on the village map by actual inspection, and the rents payable for each class of soil were ascertained. The revenue assessed amounted to rather less than half the 'assets' calculated by applying these rates, and was fixed at 12·8 lakhs. In 1877, owing to floods, mainly along the Kālī Nadī, the settlement of seventy villages was revised. Between 1883 and 1887 serious injury from floods again occurred along the Kālī Nadī, and *kāns* grass spread, while in the south the new Bhognīpur branch of the canal had caused damage. The revenue was reduced by about Rs. 19,000. The present demand falls at an incidence of Rs. 1–5–0 per acre, varying from little more than 8 annas to nearly Rs. 1–12–0. A revision of settlement has just been completed. Collections on account of land revenue and total revenue are given on the next page, in thousands of rupees.

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	12,60	12,23	12,74	12,44
Total revenue . .	14,46	16,95	17,91	18,31

Local self-government. Besides the single municipality of Mainpurī, there are seven towns administered under Act XX of 1856. Outside these, local affairs are managed by the District board, which has an income of about a lakh, chiefly derived from rates. In 1903–4 the largest item of expenditure was Rs. 81,000 on roads and buildings.

Police and jails. The District Superintendent of police has a force of 4 inspectors, 83 subordinate officers, and 340 men, besides 102 municipal and town police, and 1,859 rural and road police. A sub-inspector and 11 head constables are specially maintained in connexion with the surveillance of villages where female infanticide is believed to be prevalent. There are 15 police stations. The District jail contained a daily average of 293 prisoners in 1903.

Education. Mainpurī takes a very low place in respect of literacy; in 1901 only 2·4 per cent. of the population (4·2 males and 0·2 females) could read and write. The number of public schools fell from 151 in 1881 to 133 in 1901, but the number of pupils rose from 4,146 to 4,851. In 1903–4 there were 153 public schools with 5,151 pupils, of whom 173 were girls, besides 82 private schools with 811 pupils. Three of the public schools are managed by Government, and most of the remainder by the District or municipal boards. In 1903–4, out of a total expenditure on education of Rs. 38,000, Local funds contributed Rs. 32,000 and fees Rs. 3,000.

Hospitals and dispensaries. There are 8 hospitals and dispensaries, with accommodation for 36 in-patients. In 1903 the number of cases treated was 47,000, of whom 772 were in-patients, and 1,920 operations were performed. The expenditure in the same year was Rs. 8,200, chiefly met from Local funds.

Vaccination. About 25,000 persons were successfully vaccinated in 1903–4, representing 30 per 1,000 of population. Vaccination is compulsory only in the municipality of Mainpurī.

[M. A. McConaghey and D. M. Smeaton, *Settlement Report* (1875); *District Gazetteer* (1876, under revision).]

Mainpurī Tahsīl.—Central northern *tahsīl* of Mainpurī District, United Provinces, comprising the *parganas* of Mainpurī, Ghiror, and Kuraulī, and lying between 27° 5′ and 27° 28′ N. and 78° 42′ and 79° 5′ E., with an area of 386 square

miles. Population increased from 171,152 in 1891 to 183,180 in 1901. There are 249 villages and three towns, MAINPURĪ (population, 19,000), the District and *tahsīl* head-quarters, being the largest. The demand for land revenue in 1903-4 was Rs. 2,24,000, and for cesses Rs. 36,000. The density of population, 475 persons per square mile, is slightly below the District average. The *tahsīl* is bounded on the north by the Kālī Nadī, and is also crossed by the Isan and its tributary the Kāknadiyā, and by the Arind. Near the Kālī Nadī lies a considerable area of sandy soil or *bhūr*; but most of the *tahsīl* consists of fertile loam, in which some large swamps or *jhīls*, now partly drained, and patches of *ūsar* or barren land alone break the uniformly rich cultivation. Three branches of the Lower Ganges Canal provide ample means of irrigation. In 1900-1 the area under cultivation was 179 square miles, of which 152 were irrigated. Wells supply about half the irrigated area, canals one-third, and tanks or *jhīls* most of the remainder.

Bhongaon Tahsīl.—Eastern *tahsīl* of Mainpurī District, United Provinces, comprising the *parganas* of Bhongaon, Bewar, Alīpur Pattī, and Kishnī Nabīganj, and lying between 26° 58′ and 27° 26′ N. and 79° 1′ and 79° 26′ E., with an area of 459 square miles. Population increased from 195,368 in 1891 to 226,940 in 1901. There are 390 villages and only one town, BHONGAON (population, 5,582), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 2,86,000, and for cesses Rs. 46,000. These figures have been raised in the new settlement to Rs. 3,19,000 for revenue and Rs. 51,000 for cesses. The density of population, 494 persons per square mile, is above the District average. On the north the *tahsīl* is bounded by the Kālī Nadī, while the rivers Isan and Arind cross it from north-west to south-east. It contains a large proportion of sandy soil or *bhūr*, especially near the Kālī Nadī, while the loam area south of the Isan includes considerable areas of barren soil or *ūsar* and large swamps. During the cycle of wet years beginning in 1883 the tract near the Kālī Nadī suffered from flooding, and *kāns* spread in the affected area. Ample irrigation is provided by three branches of the Lower Ganges Canal, which supply more than half the irrigated area, and by wells, which supply about one-third. In 1900-1 the area under cultivation was 260 square miles, of which 205 were irrigated. Tanks and streams supply about 20 square miles, a larger area than in any other *tahsīl* in the District.

Karhal Tahsīl.—Central southern *tahsīl* of Mainpurī District, United Provinces, comprising the *parganas* of Karhal and Barnāhal, and lying between 26° 56′ and 27° 9′ N. and 78° 46′ and 79° 10′ E., with an area of 218 square miles. Population fell from 100,297 in 1891 to 98,398 in 1901. There are 189 villages and one town, KARHAL (population, 6,268), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 1,75,000, and for cesses Rs. 28,000. The density of population, 451 persons per square mile, is the lowest in the District, and this is the only *tahsīl* which lost in population between 1891 and 1901. The Sengar, flowing from north-west to south-east, divides the *tahsīl* into two parts. The eastern portion forms part of the great central loam tract, and its fertility is interrupted only by patches of barren land called *ūsar*, and great swamps from which are formed the Puraha and Ahneya streams, flowing into Etāwah. Although the west is more sandy it contains no *ūsar*; this tract suffered during the scarcity of 1896–7. In 1901–2 the area under cultivation was 110 square miles, of which 101 were irrigated. The Etāwah branch of the Lower Ganges Canal serves the tract east of the Sengar, supplying about half of the irrigated area, and wells irrigate most of the remainder.

Shikohābād Tahsīl.—South-western *tahsīl* of Mainpurī District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 53′ and 27° 11′ N. and 78° 29′ and 78° 50′ E., with an area of 294 square miles. Population increased from 140,093 in 1891 to 157,659 in 1901. There are 287 villages and two towns, the larger of which is SHIKOHĀBĀD (population, 10,798), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,71,000, and for cesses Rs. 44,000. The density of population, 536 persons per square mile, is the highest in the District. On the south-west the *tahsīl* is bounded by the Jumna, while the Sirsā flows through the centre. The Sengar crosses the northern portion, and the Agangā rises near Shikohābād. North of the Sirsā the soil, though light, is very fertile; but south of this river it becomes sandy and continues to deteriorate till the Jumna ravines are reached. The tract south of the Sirsā is irrigated by the Bhognīpur branch of the Lower Ganges Canal. When first constructed this work interfered with drainage, but cuts have been made to improve this. In 1902–3 the cultivated area was 196 square miles, of which 160 were irrigated. Wells supply more than half of the irrigated area, and the canal

about a third. The dry tract suffered to some extent during the scarcity of 1896-7.

Mustafābād.—North-western *tahsīl* of Mainpurī District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 8′ and 27° 31′ N. and 78° 27′ and 78° 46′ E., with an area of 318 square miles. Population increased from 155,253 in 1891 to 163,180 in 1901. There are 265 villages and only one town, which contains less than 5,000 inhabitants. The *tahsīl* head-quarters were formerly at Mustafābād, but were moved to Jasrāna in 1898. The demand for land revenue in 1903-4 was Rs. 2,90,000, and for cesses Rs. 46,000. The density of population, 513 persons per square mile, is slightly above the District average. Three rivers—the Arind, Sengar, and Sirsā—cross the *tahsīl*, the Sengar having two branches known as Sengar and Senhar. A sandy ridge runs transversely from north-west to south-east, but most of the soil is a fertile loam. In the south-western half the wells are often brackish, and the weed *baisurī* (*Pluchea lanceolata*) is common. Irrigation is supplied by three branches of the Lower Ganges Canal. In 1902-3 the area under cultivation was 181 square miles, of which 101 were irrigated. Canals serve about one-fifth of the irrigated area, and wells supply most of the remainder.

Mainpurī Estate.—A *talukdāri* estate in the District of the same name, United Provinces, with an area of 89 square miles. The rent-roll for 1903-4 amounted to more than a lakh, and the revenue and cesses payable to Government by the estate were Rs. 58,000. The Rājā of Mainpurī is regarded as the head of the Chauhān Rājputs in the Doāb. He traces descent to the renowned Prithwī Rāj of Delhi, who fell before Muhammad Ghorī in 1192. According to tradition, the Chauhāns settled near Bhongaon early in the fourteenth century. It is probable that the Rai Pratāp, mentioned by the Muhammadan historians as occupying part of this District towards the close of the fifteenth century, was a member of the family. Pratāp aided Bahlol Lodī in his wars with Jaunpur and was confirmed in his estates. Jagat Man, ninth in descent from Pratāp, founded the city of Mainpurī, which was extended in 1749 by another descendant. During the rule of the Oudh government, towards the close of the eighteenth century, the Rājā was deprived of many of the farms he had previously held; but at the cession to the British a large tract was settled with him as *talukdār*, the estate being sometimes known as Manchana. In 1840 it was decided that settlement should be

made with the subordinate proprietors where these existed, the *talukdār* receiving a certain proportion of the rental 'assets,' but being excluded from management of the villages. The Rājā now receives this allowance from 133 villages, while his *zamīndāri* estate comprises 75 villages. In the Mutiny Rājā Tej Singh rebelled, and the estate was confiscated and conferred on his uncle Bhawānī Singh, who had contested the title when Tej Singh succeeded. The present Rājā, Rām Partāb Singh, is a son of Bhawānī Singh.

Bhongaon Town.—Head-quarters of the *tahsīl* of the same name in Mainpurī District, United Provinces, situated in 27° 16′ N. and 79° 11′ E., on a branch of the East Indian Railway, and on the grand trunk road. Population (1901), 5,582. According to tradition, the town was founded by a mythical Rājā Bhīm, who was cured of leprosy by bathing in a pond here. It was the head-quarters of a *pargana* under Akbar, and a high mound marks the residence of the *āmil* or governor. Bhongaon is administered under Act XX of 1856, with an income of about Rs. 1,300. It has very little trade. The *tahsīlī* school has about 70 pupils.

Karhal Town.—Head-quarters of the *tahsīl* of the same name in Mainpurī District, United Provinces, situated in 27° N. and 78° 57′ E., on the road from Mainpurī town to Etāwah. Population (1901), 6,268. The town contains a bazar of poor shops, but has some substantial brick-built houses. A Saiyid family, some of the members of which are reputed to have miraculous powers, resides here. The *tahsīlī* and dispensary are the chief public buildings. Karhal is administered under Act XX of 1856, with an income of about Rs. 1,400. Trade is local. The *tahsīlī* school has about 90 pupils.

Mainpurī Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 27° 14′ N. and 79° 3′ E., at the junction of metalled roads from Agra, Etāwah, Etah, and Fatehgarh, and on a branch of the East Indian Railway recently opened from Shikohābād. Population (1901), 19,000. The town, which lies south of the Isan river, is made up of two parts, Mainpurī proper and Muhkamganj, lying respectively north and south of the Agra road. The former existed, according to tradition, in the days of the Pāndavas, while another fable connects an image known as Main Deo with the name. It seems to have been of no importance till the Chauhāns migrated here from Asaulī at dates ranging from the thirteenth to the sixteenth century, according to different

versions. The town contains a fort, composed partly of brick and partly of mud, belonging to the Rājā. Muhkamganj was founded in 1803 by Rājā Jaswant Singh. In the Mutiny the place was occupied by the Jhānsi rebels, who plundered and burnt the civil station, but were beaten off when they attempted to sack the town. The Agra branch of the grand trunk road runs through the centre and forms a wide street, lined on either side by shops which constitute the principal bazar. Besides a *tahsīlī* and dispensary, the town contains the head-quarters of the American Presbyterian Mission, a large *sarai* and grain market called Raikesganj, after the Collector who built it about 1849, and a fine street, called Laneganj, after another Collector. The civil station, with the District offices and jail, lies north of the Isan, which is crossed by stone bridges. Mainpurī has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 16,000. In 1903–4 the income was Rs. 22,000, chiefly from octroi (Rs. 16,000); and the expenditure was Rs. 25,000. Trade is mainly local, but may be expected to expand when the railway is opened. The place is noted for the production of articles of carved wood inlaid with brass wire. A steam cotton-ginning factory, recently opened, employs about 100 hands. The municipality maintains two schools and aids two others, with 322 pupils in 1904. There are also a District and *tahsīlī* schools, and a Presbyterian Mission school.

Pendhat.—Village in the Mustafābād *tahsīl* of Mainpurī District, United Provinces, situated in 27° 21′ N. and 78° 36′ E., 29 miles north-west of Mainpurī town. Population (1901), 2,423. It is noted for the worship of Jokhaiyā, a deity believed by the lower classes in the Doāb to have great powers. Jokhaiyā was a Bhangī, who, according to tradition, fell in the war between Prithwī Rāj of Delhi and Jai Chand of Kanauj. The shrine is visited annually by thousands of pilgrims in the hope of obtaining offspring or an easy childbirth.

Rāprī.—Village in the Shikohābād *tahsīl* of Mainpurī District, United Provinces, situated in 26° 58′ N. and 78° 36′ E., in the Jumna ravines, 44 miles south-west of Mainpurī town. Population (1901), 900. The importance of Rāprī lies in its past history. Local tradition ascribes its foundation to Rao Zorāwar Sen, also known as Rāpar Sen, whose descendant fell in battle against Muhammad Ghorī in A.D. 1194. Mosques, tombs, wells, and reservoirs mark its former greatness; and several inscriptions found among the ruins have thrown much light on the local history. The most important of these dates

from the reign of Alā-ud-dīn Khiljī. Many buildings were erected by Sher Shāh and Jahāngīr; and traces of the gate of one of the royal residences still exist, indicating that Rāprī must at one time have been a large and prosperous town. Rāprī has always been important as commanding one of the crossings of the Jumna; and a bridge of boats is maintained here, forming one of the main routes to the cattle fair at BATESAR in Agra District, which is one of the largest in the United Provinces.

Shikohābād Town.—Head-quarters of the *tahsīl* of the same name in Mainpurī District, United Provinces, situated in 27° 6′ N. and 78° 57′ E., on the Agra branch of the grand trunk road, and 2 miles from the Shikohābād station on the East Indian Railway. Population (1901), 10,798. The town is said to have been first colonized by a Musalmān emigrant from RĀPRĪ, named Muhammad, after whom it was called Muhammadābād. The name was changed to Shikohābād in honour of Dārā Shikoh. The Marāthās held the place and built a fort north of the site; but during the eighteenth century it often changed hands, and belonged at different times to the Jāts, the Rohillas, Himmat Bahādur, and Oudh. The British obtained possession in 1801 and established a cantonment south-west of the town, the garrison of which was surprised by a Marāthā force under Fleury in 1802, after which the troops were moved to Mainpurī. Besides the *tahsīli*, a dispensary is situated here. The town is administered under Act XX of 1856, with an income of about Rs. 2,600. Shikohābād is celebrated for its sweetmeats and manufacture of country cloth. A steam cotton gin employed about 100 hands in 1904. The *tahsīli* school has about 140 pupils and a girls' school 45.

Sirsāganj.—Village in the Shikohābād *tahsīl* of Mainpurī District, United Provinces, situated in 27° 3′ N. and 78° 43′ E., 6 miles north of the Bhadān station on the East Indian Railway. Population (1901), 4,122. The village of Sirsā is purely agricultural; but Sirsāganj, the market adjoining it, is the greatest centre of trade in the District. It consists of one principal street with a market-place called Raikesganj, after the Collector who improved it. Trade is chiefly in grain, cotton, and hides, and a small cotton gin has been opened. Sirsāganj is administered under Act XX of 1856, with an income of about Rs. 1,300. It contains a primary school with about 50 pupils.

Etāwah District (*Itāwā* or *Itāwa*).—District in the Agra Division of the United Provinces, lying between 26° 22′ and

Boundaries, con-

figuration, and river system. 27° 1′ N. and 78° 45′ and 79° 45′ E., with an area of 1,691 square miles. It is bounded on the north by Mainpurī and Farrukhābād; on the east by Cawnpore; on the south by Jālaun; and on the west by the State of Gwalior and Agra District. Etāwah lies entirely in the Gangetic plain, but its physical features vary considerably and are determined by the rivers which cross it. Chief of these is the Jumna, which forms part of the western boundary, and then flows across the western portion of the District to the southern boundary, where it separates Etāwah from Jālaun. The area north-east of the Jumna is a level tract of extremely fertile soil, intersected by small rivers, the Pāndū, the Arind, with its tributaries the Ahneya and Puraha, and the more important Sengar, with its tributary the Sirsā. In this area the stretch of rich cultivation is interrupted by patches of barren soil called *ūsar*, and by swamps or *jhīls*. The banks of both the Sengar (in the lower reaches) and the Jumna are high and fissured by deep ravines, increasing in wildness and extent as the rivers flow eastward. West of the Jumna the character of the country changes completely. The river Chambal forms part of the western boundary of the District, and after a winding course across part of it falls into the Jumna near the southern boundary, and south-west of it the Kuārī also divides Etāwah from the State of Gwalior. The area between the Jumna and Chambal presents, for the most part, a scene of wild desolation, which can hardly be equalled in the plains of India. In the central tract a small area of level upland is found; but in the north-west and south-east the network of ravines which borders both the rivers meets in an inextricable maze. The finest view of this desolate wilderness is obtained from the fort at Bhareh, which stands near the junction of the Chambal and Jumna, and within a few miles of the junction of the Kuārī, Sind, and Pahūj. South-west of the Chambal lies a tract as inhospitable as that just described, but with ravines of a less precipitous nature.

Geology. The District consists entirely of Gangetic alluvium, and the chief mineral product is *kankar* or limestone. This occurs in both nodular and block form, especially in the ravines. Reefs of *kankar* obstructing the navigation of the Jumna were removed many years ago, when some interesting mammalian remains were discovered[1].

Botany. The flora is that of the plains generally. A large jungle once existed in the north-east, but has been largely cut down and cultivated, and only patches of *dhāk* (*Butea frondosa*)

[1] *Journal, Asiatic Society of Bengal*, vol. ii, p. 622.

remain. The chief trees growing wild are varieties of acacia, especially the *babūl* (*Acacia arabica*), and the District is fairly well wooded. Near the town of Etāwah a portion of the Jumna ravines was enclosed as a fuel and fodder reserve, but this has been leased to a Cawnpore tannery as a *babūl* plantation. Elsewhere the ravines are generally covered merely with grass and thorny brushwood, or are entirely bare.

Leopards are occasionally seen in the wild tract south of the Jumna, and a tiger was shot in the Reserve in the Fisher Forest in 1902. Wolves are becoming rare, and hog are commonest near the ravines and in the jungle near the north of the District. The antelope and *nīlgai* are found in the Doāb, and 'ravine deer' (gazelle) near the rivers. Duck, teal, and snipe abound in the cold season. The larger rivers contain turtles, crocodiles, and the Gangetic porpoise, besides a great variety of fish. Fauna.

The climate is that of the Doāb generally. From April to the break of the monsoon hot west winds are usual, but the District is regarded as healthy. The annual rainfall averages 32 inches. Only slight variations occur in different parts, but the north-east receives a little more than the west. Considerable fluctuations are recorded from year to year. In 1868-9 the fall was less than 15 inches, while a year earlier it was nearly 50. Climate and rainfall.

Numerous mounds still show the ancient sites of prehistoric forts throughout the District, which long formed a main stronghold of the Meos, the Ishmaelites of the Upper Doāb. In their hands it doubtless remained until after the earliest Muhammadan invasion, as none of the tribes now inhabiting its borders has any traditions which stretch back beyond the twelfth century of our era. Etāwah was probably traversed both by Mahmūd of Ghazni and by Kutb-ud-dīn on their successful expeditions against the native dynasties; but the memorials of these events are indistinct on all local details. It is clear, however, that the Hindus of Etāwah succeeded on the whole in maintaining their independence against the Musalmān aggressors; for while some of the neighbouring Districts have a number of influential Muhammadan colonies, only a thin sprinkling of Shaikhs or Saiyids can be found among the territorial families of Etāwah. The Rājputs seem to have occupied the District during the twelfth century. Etāwah town lies on one of the old routes through Northern India, and became the seat of a Muhammadan governor; but the histories teem with notices of raids conducted with varying History.

success by the Saiyid generals against the 'accursed infidels' of Etāwah. The Hindu chiefs were generally able to defend their country from the invaders, though they made peace after each raid by the payment of a precarious tribute. Early in the sixteenth century Bābar conquered the District, together with the rest of the Doāb; and it remained in the power of the Mughals until the expulsion of Humāyūn. His Afghān rival, Sher Shāh, found this portion of his dominions difficult to manage, and stationed 12,000 horsemen in and near the neighbouring *pargana* of Hatkānt (now the Bāh *tahsīl* in Agra District), who dealt out such rude measures of justice as suited the circumstances of the place and the people. Akbar included parts of Etāwah in his *sarkārs* of Agra, Kanauj, Kālpī, and Erachh. But even that great administrator failed to incorporate Etāwah thoroughly with the dominions of the Delhi court. Neither as proselytizers nor as settlers have the Musalmāns impressed their mark so deeply here as in other Districts of the Doāb. During the decline of the Mughal power, Etāwah fell at first into the hands of the Marāthās. The battle of Pānīpat dispossessed them for a while, and the District became an apanage of the Jāt garrison at Agra. In 1770 the Marāthās returned, and for three years they occupied the Doāb afresh. But when, in 1773, Najaf Khān drove the intruders southward, the Nawāb Wazīr of Oudh crossed the Ganges, and laid claim to his share of the spoil. During the anarchic struggle which closed the century, Etāwah fell sometimes into the hands of the Marāthās, and sometimes into those of the Wazīr; but at last the power of Oudh became firmly established, and was not questioned until the cession to the East India Company in 1801. Even after the British took possession many of the local chiefs maintained a position of independence, or at least of insubordination; and it was some time before the revenue officers ventured to approach them with a demand for the Government dues. Gradually, however, the turbulent landowners were reduced to obedience, and industrial organization took the place of the old predatory régime. The murderous practice of *thagī* had been common before the cession, but was firmly repressed by the new power. In spite of a devastating famine in 1837, which revolutionized the proprietary system by dismembering the great *talukas* or fiscal farms, the District steadily improved for many years under the influence of settled government. The Mutiny of 1857 interrupted for some months this progress.

News of the outbreak at Meerut reached Etāwah two

days after its occurrence. Within the week, a small body of mutineers passed through the District and fired upon the authorities, upon which they were surrounded and cut down. Shortly after, another body occupied Jaswantnagar, and, although a gallant attack was made upon them by the local officials, they succeeded in holding the place. On May 22 it was thought desirable to withdraw from Etāwah town; but the troops mutinied on their march, and it was with difficulty that the officers and ladies reached Barhpura. There they were joined by the first Gwalior Regiment, which, however, itself proved insubordinate on June 17. It then became necessary to abandon the District and retire to Agra. The Jhānsi mutineers immediately occupied Etāwah, and soon passed on to Mainpurī. Meanwhile many of the native officials proved themselves steady friends of order, and communicated whenever it was possible with the Magistrate in Agra. Bands of rebels from different quarters passed through between July and December, until on Christmas Day Brigadier Walpole's column re-entered the District. Etāwah station was recovered on January 6, 1858; but the rebels still held the Shergarh *ghāt*, on the main road to Bundelkhand, and the whole south-west of the District remained in their hands. During the early months of 1858 several endeavours were made to dislodge them step by step; but the local force was not sufficient to allow of any extensive operations. Indeed, it was only by very slow degrees that order was restored; and as late as December 7 a body of plunderers from Oudh, under Fīroz Shāh, entered the District, burning and killing indiscriminately wherever they went. They were attacked and defeated at Harchandpur, and by the end of 1858 tranquillity was completely restored. Throughout the whole of this trying period the loyalty exhibited by the people of Etāwah themselves was very noticeable. Though mutineers were constantly marching through the District, almost all the native officials remained faithful; and many continued to guard the treasure, and even to collect revenue, in the midst of anarchy and rebellion. The principal *zamīndārs* also were loyal almost to a man.

Archaeology.

The District is rich in ancient mounds, though none has been explored. Mūnj and Asai Khera in the Etāwah *tahsīl* have been identified with places visited by Mahmūd of Ghazni, but with doubtful accuracy (see ZAFARĀBĀD). At the latter place a number of Jain sculptures, dated between the ninth and twelfth centuries, have been discovered. Several copperplate

grants of Gobind Chand of Kanauj, dated early in the twelfth century, have been found at different places. The most striking building in the District is the Jāma Masjid at ETĀWAH TOWN, built by altering an ancient Hindu or Buddhist structure.

The people.

There are six towns and 1,474 villages. Population has increased considerably during the last thirty years. The number of inhabitants at the last four enumerations was as follows: (1872) 668,641, (1881) 722,371, (1891) 727,629, and (1901) 806,798. The District is divided into four *tahsīls*—ETĀWAH, BHARTHANA, BIDHŪNA, and AURAIYĀ—the head-quarters of each being at a place of the same name. The principal town is the municipality of ETĀWAH, the administrative head-quarters of the District. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Etāwah	426	2	353	216,142	507	+ 9·1	8,055
Bharthana	416	2	300	191,141	459	+ 12·4	5,101
Bidhūna	433	...	413	206,182	476	+ 9·9	5,310
Auraiyā	416	2	408	193,333	465	+ 12·3	5,829
District total	1,691	6	1,474	806,798	477	+ 10·9	24,295

About 94 per cent. of the total are Hindus and less than 6 per cent. Musalmāns, the latter proportion being the lowest in any District of the Doāb. The absence of large towns and the barren area in the south-west cause a low density. The increase between 1891 and 1901 was large, as the District escaped from serious famine, and the number was augmented by immigration. Almost the whole population speak Western Hindī, the prevailing dialect being Kanaujiā.

Castes and occupations.

Among Hindus the most numerous castes are Chamārs (leather-workers and labourers), 107,000; Ahīrs (graziers and cultivators), 103,000; Brāhmans, 97,000; Rājputs, 69,000; Kāchhīs (cultivators), 51,000; Lodhas (cultivators), 48,000; Baniās, 29,000; and Korīs (weavers), 27,000. It has already been stated that Muhammadans form a very small part of the total. The principal tribes are Pathāns, 11,000, and Shaikhs (many of whom are descended from converted Hindus), 16,000. The agricultural population forms 70 per cent. of the total, while 7 per cent. are supported by general labour and

6 per cent. by personal services. Brāhmans and Rājputs each hold about one-third of the land in proprietary right. Brāhmans, Rājputs, and Ahīrs occupy the largest areas as tenants; but Kāchhīs and Lodhas are the best cultivators. Ahīrs are the founders of many new hamlets, as they prefer to have waste land as pasturage for their cattle, and are more ready to migrate than most castes.

There were 198 native Christians in 1901, of whom 62 were Presbyterians. The American Presbyterian Church has had a mission here since 1863, with two out-stations. Christian missions.

The District contains four natural divisions affecting cultivation. The tract north-east of the Sengar is known as the *pachār*. The soil is a rich loam, interspersed with large tracts of *ūsar* and marshes or *jhīls*, and produces fine crops of wheat and sugar-cane. South-west of the Sengar, and reaching to the high ground in which the Jumna ravines begin, lies an area known as the *ghār*, the soil of which is a red sandy loam. Water is at a great depth, and there are no *ūsar* plains and no *jhīls*. The extension of canal-irrigation has made this the most fertile tract in the District, and there is now little difference between it and the *pachār*. The uplands and ravines of the Jumna are called the *karkha*. The uplands are similar to the *ghār*, but the ravines are barren. Along the Jumna rich alluvial land is found in places where the river does not approach the high bank. The area between the Jumna and Chambal and south-west of the Chambal, called *pār*, is largely uncultivated. Where the ravines do not meet, the table-land is composed of good loam. The Chambal alluvium is black soil resembling the *mār* of Bundelkhand, and is fertile; but there is little of it. Where the ravines contain good soil, this is protected by terraces and embankments, as in the Kumaun hills. General agricultural conditions.

The tenures are those usually found in the United Provinces. Out of 4,282 *mahāls*, 2,030 are held *zamīndāri* and 1,252 *pattīdāri* or *bhaiyāchārā*; but the last class of tenure is very rare. The main agricultural statistics in 1903-4 are given below, in square miles:— Chief agricultural statistics and principal crops.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Etāwah . . .	426	221	96	99
Bharthana . . .	416	213	103	96
Bidhūna . . .	433	204	116	61
Auraiyā . . .	416	238	82	105
Total	1,691	876	397	361

The chief food-crops, with their area in square miles, in the same year were: wheat (179), gram (144), *jowār* (93), barley (135), and *bājra* (150). Cotton covered 68 square miles and poppy 34.

Improvements in agricultural practice. There has been no extension of the cultivated area in the last thirty years. The area twice cropped has, however, nearly doubled, and is now about a fifth of the cultivated area. The cultivation of cotton and sugar has decreased, but on the other hand the area under maize and rice is higher than in 1872. In the west of the District drainage was obstructed by the railway and by the Bhognīpur branch of the canal, but has been improved. Advances under the Agriculturists' Loans Act have been taken freely in adverse seasons. Thus in the wet years 1890–2, Rs. 61,000 was advanced, and in the scarcity of 1896–7 Rs. 22,000. In ordinary years the advances are usually less than Rs. 1,000. About Rs. 47,000 was advanced in 1896–7 under the Land Improvement Loans Act; but in favourable seasons very few applications are received.

Cattle, horses, sheep, and goats. The District has no particular breed of cattle or horses. No attempts have been made to improve the indigenous strains, and the best cattle are imported. The buffaloes are, however, noted for milch purposes. Sheep and goats are reared in considerable numbers between the Jumna and Chambal, and have a considerable reputation in the Doāb. The goats, in particular, are purchased and kept to give milk.

Irrigation. The *pachār* or tract north-east of the Sengar is irrigated by the Etāwah branch of the Lower Ganges Canal, and the *ghār* or red soil area between the Sengar and the Jumna by the Bhognīpur branch of the same canal. In 1903–4 canals irrigated 276 square miles, wells 105, and tanks and other sources 16. Wells are most common in the *pachār*, and are hardly used for irrigation in the *karkha* or the *pār* area.

Minerals. Calcareous limestone or *kankar* is found in many parts of the District, both in nodules and in block form. The hardest variety is obtained from the ravines, where it has been washed free from earth.

Arts and manufactures. There are very few manufactures in the District. A little cotton cloth is woven in many villages, and finer kinds were formerly made at Etāwah town. Crude glass is made at a few places, and Jaswantnagar is noted for brass-work. Indigo is still made in 35 factories, employing about 1,700 hands; and 8 cotton gins, 3 of which contain presses, employ about 1,000. There is also a small sandal-oil factory at Sarai Mahajnau.

Commerce. Cotton, *ghī*, gram, and oilseeds form the principal exports. Much of the *ghī* comes from the State of Gwalior, and is sent to Calcutta and Bombay, while cotton is exported to Cawnpore, Bombay, and Calcutta. The imports are chiefly piece-goods, metals, drugs, and spices. There was formerly considerable traffic on the Jumna, but this has now ceased. Many fairs and markets are held in the District.

Railways and roads. The East Indian Railway passes through the centre of the District from south-east to north-west; and extensions to tap the trade of the rich *ghār* tract are under consideration. There are 89 miles of metalled and 443 miles of unmetalled roads, all of which are maintained at the cost of Local funds, though the former are managed by the Public Works department. The old imperial road from Agra to Allahābād runs through the District, but very little of it has been metalled. The chief trade route is the road from Farrukhābād to Gwalior, which is metalled, and good feeder roads have been made to the principal railway stations. Avenues of trees are maintained on 305 miles.

Famine. The District has suffered repeatedly from famine. Immediately after the commencement of British rule, drought and hailstorms caused much distress in 1803–4. Minor famines occurred in 1813–4, 1819, and 1825–6. The great famine of 1837–8 was most severely felt, and led to the breaking up of many large estates. In 1860–1 and in 1868–9 Etāwah escaped as compared with other Districts. In 1877–8, though the rains failed almost completely, the canal commanded a large area and saved the harvest. Prices were high and relief works were opened, but famine was not severe. The famine of 1896–7 was felt in the *kharka* and *pār* tracts. Relief works were necessary, and the daily number on them rose to nearly 18,000 in February, 1897. Revenue was remitted to the extent of Rs. 59,000.

District staff. The ordinary District staff consists of a Collector, a Joint Magistrate belonging to the Indian Civil Service, and three Deputy-Collectors recruited in India. There is a *tahsīldār* at the head-quarters of each *tahsīl*. Two Executive Engineers in charge of divisions of the Lower Ganges Canal and an officer of the Opium department are stationed at Etāwah town.

Civil justice and crime. There are two regular District Munsifs; but Etāwah is included in the Civil and Sessions Judgeship of Mainpurī. On the whole, crime is lighter than in other Districts of the Agra Division; dacoities and cattle-theft are, however, common. Female infanticide was formerly rife, but is rarely suspected now.

Land revenue administration.

A District of Etāwah was formed at the cession in 1801; but it included large areas now in adjoining Districts, and was administered from Mainpurī. Many changes took place, and in 1824 four subdivisions were formed. In 1840 the District took its present shape. The first settlement of 1801–2 was based on the accounts of the celebrated Almās Alī Khān, an officer of the Oudh government, and it was followed by other short-term settlements lasting three to five years. The demand at each of these was based on the previous demand, and on general considerations, such as the area under cultivation and the ease or difficulty with which collections were made. A large part of the District was held on *talukdāri* tenures; but many of the *talukdārs* gave much trouble to the administration, and some of them were forcibly ejected after open rebellion. The early settlements were oppressive, and cultivation decreased and tenants emigrated. The famine of 1837–8 completed the ruin of the *talukdārs*, whose estates were settled with the resident cultivators. Operations were commenced on a more systematic principle under Regulation VII of 1822; but progress was extremely slow, and when the first regular settlement was begun in 1833 by Mr. (afterwards Lord) John Lawrence under Regulation IX of 1833, 100 villages had not been settled. The demand fixed in 1841 amounted to 13·1 lakhs, and was a reduction of over 10 per cent. on the previous demand. The next revision was made between 1868 and 1874. The land of each village was classified according to its soil, and suitable rent rates for each class of soil were assumed. These rates were selected from rents actually paid, and the 'assets' of each village were calculated from them. The recorded 'assets' were rejected, partly as being incorrect, and partly because rents had not been enhanced as much as it was thought they might have been. The new revenue was fixed at 13·3 lakhs, which represented 50 per cent. of the assumed 'assets.' At present the demand falls at an incidence of Rs. 1–7–0 per acre, varying from Rs. 1–6–0 to Rs. 1–9–0 in different parts of the District. It was expected that the actual 'assets' would rise to the assumed 'assets' within fifteen years. The question of a revision was considered in 1900, when it was decided that the settlement should be extended for a further ten years, as no increase of revenue was expected, and the existing demand was not so unequal as to require redistribution.

Collections on account of land revenue and total revenue are given on the next page, in thousands of rupees.

Local self-

The only municipality is that of Etāwah, but five smaller

towns are administered under Act XX of 1856. Outside these, local affairs are managed by the District board, which had an expenditure of 1·4 lakhs in 1903–4, of which Rs. 64,000 was spent on roads and buildings. government.

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue .	13,28	13,34	13,30	13,23
Total revenue .	14,66	18,24	19,08	19,18

Police and jails.

The District Superintendent of police has a force of 4 inspectors, 85 subordinate officers, and 344 men, besides 135 municipal and town police, and 1,500 village and road police. There are 19 police stations. The District jail contained a daily average of 231 prisoners in 1903.

Education.

Education is not very advanced. Only 3 per cent. of the population (5 males and 0·3 females) could read and write in 1901. The number of public schools fell from 147 in 1880–1 to 119 in 1900–1; but the number of pupils rose from 3,809 to 5,096. In 1903–4 there were 160 public schools with 6,447 pupils, of whom 294 were girls, besides 114 private schools with 1,214 pupils. Of the public schools, 3 are managed by Government and 107 by the District and municipal boards, the rest being under private management. The total expenditure on education was Rs. 45,000, of which Rs. 31,000 was derived from Local funds, and Rs. 9,000 from fees.

Hospitals and dispensaries.

There are 8 hospitals and dispensaries, with accommodation for 75 in-patients. The number of cases treated in 1903 was 45,000, of whom 602 were in-patients, and 2,700 operations were performed. The expenditure was Rs. 11,000, chiefly met from Local funds.

Vaccination.

About 25,000 persons were successfully vaccinated in 1903–4, representing a proportion of 31 per 1,000 of the population. Vaccination is compulsory only in the municipality.

[C. H. T. Crosthwaite and W. E. Neale, *Settlement Report* (1875); *District Gazetteer* (1876, under revision).]

Etāwah Tahsīl.—North-western *tahsīl* of Etāwah District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 38′ and 27° 1′ N. and 78° 45′ and 79° 13′ E., with an area of 426 square miles. Population increased from 128,023 in 1891 to 216,142 in 1901. There are 353 villages and two towns: Etāwah (population, 42,570), the *tahsīl* head-quarters, and Jaswantnagar (5,405). The demand for land revenue in 1903–4 was Rs. 3,18,000, and for cesses Rs. 51,000. The density of population, 507 persons per square

mile, is a little above the District average. The *tahsīl* contains portions of the four natural tracts found in the District. North-east of the Sengar river lies the *pachār*, a fertile loam tract which, however, contains marshes and patches of barren land or *ūsar*. A tract called *ghār* lies south of the Sengar, with a soil which, though lighter, is very fertile when irrigated. The Jumna ravines, known as *karkha*, and the area between the Jumna and Chambal, called *pār*, are generally barren and there is little alluvial land. In 1903-4 the area under cultivation was 221 square miles, of which 96 were irrigated. The Etāwah and Bhognīpur branches of the Lower Ganges Canal supply more than half the irrigated area, and wells most of the remainder.

Bharthana.—Central *tahsīl* of Etāwah District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 30′ and 26° 59′ N. and 78° 59′ and 79° 21′ E., with an area of 416 square miles. Population increased from 169,979 in 1891 to 191,141 in 1901. There are 300 villages and two small towns: Lakhnā (population, 3,771) and Aherīpur (3,144). The demand for land revenue in 1903-4 was Rs. 3,07,000, and for cesses Rs. 51,000. The density of population, 459 persons per square mile, is slightly below the District average. The *tahsīl* is divided by the rivers Sengar, Jumna, and Chambal into four tracts. North of the Sengar lies a fertile area called *pachār*, intersected by two smaller streams, and containing some large areas of barren land and marshes. Irrigation is provided by the Etāwah branch of the Lower Ganges Canal. South of this river the soil is red in colour and sandy in nature. Owing to the depth of the spring-level, irrigation was formerly difficult; but the Bhognīpur branch of the Lower Ganges Canal now serves this area, which is called *ghār*. The tract bordering on the Jumna, called *karkha*, and the area south of it, known as *pār*, are intersected by ravines, but have a fair area of alluvial soil, or *kachhār*, on the banks of the river. In 1903-4 the area under cultivation was 213 square miles, of which 103 were irrigated. Canals supply six-sevenths of the irrigated area, and wells most of the rest.

Bidhūna.—North-eastern *tahsīl* of Etāwah District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 38′ and 26° 57′ N. and 79° 20′ and 79° 45′ E., with an area of 433 square miles. Population increased from 187,530 in 1891 to 206,182 in 1901. There are 413 villages, but no town. The demand for land revenue in 1903-4 was Rs. 3,68,000, and for cesses Rs. 60,000. The density of

population, 476 persons per square mile, is almost exactly equal to the District average. The *tahsīl* lies north of the river Sengar, and consists of a fertile area of rich soil, interrupted only by marshes and patches of barren land. On the north it is crossed by the Pāndū; and two small streams, the Puraha and Ahneya, unite and then join the Arind, which also flows across it. This is the most fertile *tahsīl* in the District. In 1903-4 the area under cultivation was 204 square miles, of which 116 were irrigated. A distributary of the Cawnpore branch of the Lower Ganges Canal supplies the north of the *tahsīl*, and the Etāwah branch of the same canal the southern portion. Canals serve nearly half the irrigated area, and wells most of the remainder.

Auraiyā Tahsīl.—*Tahsīl* of Etāwah District, United Provinces, conterminous with the *pargana* of the same name, lying between 26° 22′ and 26° 41′ N. and 79° 3′ and 79° 39′ E., with an area of 416 square miles. Population increased from 172,097 in 1891 to 193,333 in 1901. There are 408 villages and two towns: PHAPHŪND (population, 7,605) and AURAIYĀ (7,393), the *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 3,31,000, and for cesses Rs. 53,000. The density of population, 465 persons per square mile, is a little below the District average. The *tahsīl* is divided into four tracts by the rivers Sengar, Jumna, and Chambal. Most of it is included in the *ghār*, an area lying between the Sengar and Jumna. This has a light sandy soil, which is, however, fertile where irrigated, and it is crossed by the Bhognīpur branch of the Lower Ganges Canal. North of the Sengar the land is richer and is irrigated chiefly from wells. The high land bordering on the Jumna is intersected by ravines and is generally barren, while south of the Jumna the soil is poor and gravelly, except near the rivers, where some good alluvial land is found. In 1903-4 the area under cultivation was 238 square miles, of which 82 were irrigated, almost entirely from canals.

Auraiyā Town.—Head-quarters of the *tahsīl* of the same name in Etāwah District, United Provinces, situated in 26° 28′ N. and 79° 31′ E., 42 miles from Etāwah town. It lies on the old imperial road from Agra to Allahābād, at the point where this is crossed by the metalled road from Jālaun to Debiāpur-Phaphūnd station on the East Indian Railway. Population (1901), 7,393. The town is said to have been founded early in the sixteenth century, and contains some Hindu temples dating from a little later, and two mosques built by a Rohilla governor in the eighteenth century. It also possesses some

good *sarais*, a fine market-place called Humeganj, after a former Collector, and a dispensary. It is administered under Act XX of 1856, with an income of about Rs. 2,500. Trade is increasing, especially with Gwalior and Jālaun, and the bazar has recently been extended towards the south. There is one cotton gin, employing 200 hands in 1903, and a second was completed at the end of that year. The town school has about 200 pupils, and an aided primary school 25.

Etāwah Town.—Head-quarters of the District and *tahsīl* of the same name in the United Provinces, situated in 26° 46′ N. and 79° 1′ E., on the East Indian Railway, and at the junction of the road from Farrukhābād to Gwalior with the old imperial road from Agra to Allahābād. Population (1901), 42,570, of whom 28,544 are Hindus and 12,742 Musalmāns. The city dates back to a period before the Musalmān conquest, but nothing is known of its early history. It became the seat of a Muhammadan governor, and was repeatedly attacked and plundered in the troublous times after the death of Fīroz Shāh Tughlak, when its Hindu chief raised the standard of revolt. Under Akbar it was the chief town of a *pargana* and is mentioned in the *Ain-i-Akbarī* as possessing a brick fort. A century later Etāwah was famous as a banking and commercial centre; but in the eighteenth century it suffered much from Rohilla and afterwards from Marāthā raids. For its later history and events of the Mutiny, see ETĀWAH DISTRICT. The Jāma Masjid is a fine building constructed from a Hindu temple, with a massive front or propylon resembling those of the great mosques at JAUNPUR. There are also some fine Hindu temples and bathing *ghāts*, and a great mound with a ruined fort. The town is situated among the ravines of the Jumna, to the banks of which the suburbs extend. Humeganj, a handsome square, called after a former Collector, Mr. A. O. Hume, C.B., contains the public buildings and forms the centre of the city. It includes a market-place, *tahsīlī*, mission-house, police station, and male and female hospitals. The Hume High School, built chiefly by private subscriptions, and one of the first to be founded in the United Provinces, is a handsome building. The north and south sides of the square form the principal grain and cotton markets. The civil station lies about half a mile north of the town. Besides the ordinary District staff, two Executive Engineers and an officer of the Opium department have their head-quarters here. Etāwah is also the chief station of the American Presbyterian Mission in the District. The muni-

cipality was constituted in 1864. During the ten years ending 1901, the income averaged Rs. 37,000 and the expenditure Rs. 36,000. In 1903-4 the income was Rs. 55,000, chiefly from octroi (Rs. 41,000); and the expenditure was Rs. 59,000. There are no important manufactures, but cotton cloth is woven, and the town is noted for a special sweetmeat. In 1903 seven cotton gins and presses employed 805 hands. Trade consists largely in the export of *ghī*, gram, cotton, and oilseeds. The municipality maintains four schools and aids eight others, with a total attendance of 814 pupils in 1904.

Jaswantnagar.—Town in the District and *tahsīl* of Etāwah, United Provinces, situated in 26° 53′ N. and 78° 53′ E., on the East Indian Railway. Population (1901), 5,405. The town is named after Jaswant Rai, a Kāyasth from Mainpurī, who settled here in 1715. A small Hindu temple west of the town was occupied on May 19, 1857, by mutineers of the 3rd Native Cavalry; during a bold attempt to dislodge them, the Joint Magistrate was wounded in the face. The town was once a municipality, but is now administered under Act XX of 1856, with an income of about Rs. 1,800. There is a considerable trade in yarn, cattle, country produce, and English piece-goods, besides an export of *ghī* and of *khārua* cloth, which is largely manufactured. Ornamental brassware is also made here, articles for religious use by Hindus being chiefly produced. The town school has about 115 pupils, and there is a branch of the American Presbyterian Mission.

Phaphūnd.—Town in the Auraiyā *tahsīl* of Etāwah District, United Provinces, situated in 26° 36′ N. and 79° 28′ E. 36 miles south-east of Etāwah town. Population (1901), 7,605. The town was a place of some importance before British rule, but it declined during the eighteenth century. It was formerly the head-quarters of a *tahsīl*, and is still the residence of a Munsif, and contains a dispensary. The tomb and mosque of a celebrated saint, Shāh Bukhārī, who died in 1549, attract about 10,000 pilgrims annually. Phaphūnd is administered under Act XX of 1856, with an income of about Rs. 2,000. There is little trade. The town school has about 200 pupils, and a girls' school about 30.

Etah District (*Eta*).—District in the Agra Division of the United Provinces, lying between 27° 18′ and 28° 2′ N. and 78° 11′ and 79° 17′ E., with an area of 1,737 square miles. It is bounded on the north by the river Ganges, separating it from Budaun; on the west by Alīgarh, Muttra, and Agra; on the

Boundaries, configuration, and river system.

south by Agra and Mainpurī; and on the east by Farrukhābād. Bordering on the Ganges lies a broad stretch of alluvial land, known as the *tarai*, reaching to the old high bank of the river. Below this is the stream called the Būrhigangā, or old bed of the Ganges, which had become blocked in places by spits of sand, but has been deepened and straightened by the Irrigation department, and now carries off drainage. The rest of the District is situated in the upland plain of the Doāb, and its physical features depend chiefly on the rivers which cross it from north-west to south-east. The largest of these is the KĀLI NADĪ (EAST), or Kālindrī, as it is generally and more correctly called in this District. It has a deep and well-defined channel, but occasionally brings down disastrous floods. The other rivers are the Isan, Arind, and Sengar (also called the Isan here), which are dry in the hot season. The central tract contains a few marshes or *jhīls*.

Geology. The District consists entirely of Gangetic alluvium; and *kankar* or calcareous limestone, and saline efflorescences on the soil, are the only minerals found.

Botany. The flora presents no peculiarities. Trees and groves are comparatively scarce; the mango, *nīm* (*Melia Azadirachta*), tamarind, and *jāmun* (*Eugenia Jambolana*) are perhaps the commonest trees. The only jungle is composed of *dhāk* (*Butea frondosa*) or *babūl* (*Acacia arabica*). The reeds found in the *tarai* are used extensively for thatching and for making rope.

Fauna. Etah was formerly noted for sport, and hog and antelope are still fairly common. Wild cattle have now become very rare, and the improvements to the Būrhigangā have lessened the attractions for wild-fowl. Wolves are occasionally seen, and jackals, though occurring in many parts, are comparatively rare.

Climate and rainfall. The absence of large marshes and the common occurrence of barren areas and sandy soil, together with the facilities for drainage, make the climate of Etah, except south of the Kālī Nadī, dry and healthy; but dust-storms are frequent in the hot season. In winter the cold is sometimes intense, though frost is rare. The annual rainfall for the District averages 29 inches, varying from 25 in the Jalesar *tahsīl* in the west, to 34 in the Alīganj *tahsīl* in the east.

History. The early history of the District is altogether uncertain. Ancient mounds along the Kālī Nadī point to the presence of important towns early in the Christian era. Tradition says that Ahīrs and Bhars were followed by Rājputs, and the

District must have formed part of the kingdom of Kanauj. When that great state was conquered by Muhammadans, Etah came under Muslim rule, and was governed from Koil, Biānā, or Kanauj. Patiālī, in the north of the District, was the principal town; and it was visited by Ghiyās-ud-dīn Balban about 1270, who chastised the lawless peasantry in the neighbourhood, and left a garrison to keep open the roads and protect caravans and merchants. Constant expeditions were required in later years, and in the fifteenth century the District suffered from the struggle between Delhi and Jaunpur, being taken and retaken by the rival armies. Bahlol Lodī died at Sakīt in 1489 from wounds inflicted in a battle with the Rājputs. Under Akbar, raids against the refractory Hindus continued, and in the eighteenth century the District fell into the hands of the Bangash Nawābs of Farrukhābād; but even these never obtained a firm hold. Later it was shared between the Nawāb of Oudh and the Nawāb of Farrukhābād, and was acquired by the British in 1801–2, when the present area was distributed among the surrounding Districts. After many territorial changes a subdivision was formed in 1845, on account of the lawlessness of the outlying portions, which included most of the present District; and Etah became a separate charge in 1856.

The succeeding year saw the outbreak at Meerut which quickly developed into the Mutiny of 1857. As soon as the troops in garrison at Etah received intelligence of the revolt at Alīgarh, the whole body left the station without any disturbance. As there was no place of strength in the town and no force with which to defend it, the Magistrate found it necessary to withdraw until the mutineers from Mainpurī and Etāwah had passed through. After a gallant but unsuccessful attempt to hold Kāsganj, the whole District was abandoned on June 7, and the officers reached Agra in safety. Damar Singh, Rājā of Etah, then set himself up as an independent ruler in the south of the District. As usual, however, rival claimants appeared in various quarters; and towards the end of July the rebel Nawāb of Farrukhābād took practical possession of the country for some months. On the approach of General Greathed's column from Delhi, the rebels retired, and Mr. Cocks was appointed Special Commissioner for Etah and Alīgarh. The force at his disposal, however, was quite insufficient to restore order, and the rebels still continued to hold Kāsganj. It was not till December 15 that Colonel Seaton's column attacked the rebels at Gangīrī in Alīgarh District, and after totally routing

them, occupied Kāsganj. By the middle of 1858 order was completely restored, and peace has not since been disturbed.

Archaeology. The District contains several ancient sites, though these have not been fully explored. Atranjī Khera and Bilsar have at different times been identified with the Pi-lo-shan-na visited by Hiuen Tsiang in the seventh century[1]. At Bilsar were found two pillars with inscriptions of Kumāra Gupta, dated in A.D. 415-6[2]. The village of Nūh Khera has extensive mounds containing relics of the Buddhist period, and it is still regarded by several of the gipsy tribes as their head-quarters. Patiālī, Sarai Aghat, and SORON are other places of great antiquity, while the chief Muhammadan buildings are found at MĀRAHRA and Sakīt.

The people. There are 18 towns and 1,466 villages in the District. Population has fluctuated considerably in the last thirty years. The number of inhabitants at the last four enumerations was as follows: (1872) 829,118, (1881) 756,523, (1891) 701,679, and (1901) 863,948. The great decrease between 1872 and 1891 was due to the deterioration of the land owing to flooding about 1884; but there is some reason to believe that the figure for 1872 was over-estimated, and it is probable that the population did not alter much between 1872 and 1881. There are four *tahsīls*—ETAH, KĀSGANJ, ALĪGANJ, and JALESAR—the head-quarters of each being at a place of the same name. The principal towns are the municipalities of KĀSGANJ, JALESAR, SORON, and ETAH, the District head-quarters, and the 'notified area' of MĀRAHRA. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Etah	492	4	463	259,773	528	+ 14.4	6,160
Kāsganj	492	6	468	265,216	539	+ 38.4	6,016
Alīganj	526	6	379	205,560	391	+ 26.9	2,900
Jalesar	227	2	156	133,399	588	+ 10.2	3,567
District total	1,737	18	1,466	863,948	497	+ 23.1	18,643

Hindus form 88 per cent. of the total and Musalmāns nearly 11 per cent. The density of population is about the same as that of the surrounding Districts, but the rate of

[1] A. Cunningham, *Archaeological Survey Reports*, vol. i, p. 269, and vol. xi, p. 13.

[2] J. F. Fleet, *Gupta Inscriptions*, p. 42.

increase between 1891 and 1901 was the highest in the United Provinces. This was due to recovery after previous bad seasons due to flooding. Western Hindī is spoken by almost the entire population, the prevailing dialect being Braj.

Castes and occupations.

The most numerous castes among Hindus are: Chamārs (leather-workers and labourers), 114,000; Ahīrs (graziers and cultivators), 88,000; Lodhas (cultivators), 88,000; Rājputs, 80,000; Brāhmans, 63,000; and Kāchhīs (cultivators), 62,000. The District contains several gangs of wandering tribes, such as Hābūrās and Nats. Among Muhammadans are found Shaikhs, 15,000; Pathāns, 12,000; Fakīrs, 7,000; and Rājputs, 6,000. The agricultural population forms nearly 69 per cent. of the total—a high proportion. Rājputs, Brāhmans, and Kāyasths are the principal landholders, while Rājputs, Brāhmans, Lodhas, Ahīrs, and Kāchhīs are the chief cultivators.

Christian missions.

Of the 4,268 native Christians in 1901, more than 3,700 were Methodists. The American Methodist Mission, to which these belong, is controlled from Agra, each *tahsīl* forming a circuit. The American Presbyterian Church commenced work in the District in 1843, but has only recently appointed a minister here. There are also branches of the Church Missionary Society at Soron and Kāsganj.

General agricultural conditions.

The District comprises three natural tracts. The *tarai*, lying between the Ganges and its old high bank, south of the Būrhigangā, contains rich fertile soil in its lower parts, while the higher ridges are bare sand. It is especially liable to injury from floods or from waterlogging. Between the Būrhigangā and the Kālī Nadī lies an area which consists of a light sandy soil, flanked by strips of high sandy uplands near the rivers, but changing near the centre to loam and barren *ūsar*. This tract also has suffered much in the past from waterlogging, and, where cultivation is relaxed, from the growth of the grass called *kāns* (*Saccharum spontaneum*). Along the south bank of the Kālī Nadī stretches another line of high sandy soil, beyond which is a rich plain of fertile loam interspersed with *ūsar* plains.

Chief agricultural statistics and principal crops.

The tenures are those usually found in the United Provinces. Out of 2,500 *mahāls*, about 1,500 are *zamīndāri* and 1,000 *pattīdāri* or *bhaiyāchārā*, the last class being very few in number. The main agricultural statistics for 1898–9[1] are given in the table on the next page, in square miles.

The areas in square miles under the principal food-crops in the same year were: wheat (332), barley (147), *bājra* (140),

[1] Later figures are not available, owing to settlement operations.

jowār (123), maize (113), and gram (99). Cotton occupied 48 square miles, sugar-cane 27, indigo 23, and poppy 12.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Etah	492	274	171	41
Kāsganj	492	347	108	76
Alīganj	526	287	85	134
Jalesar	227	148	87	15
Total	1,737	1,056	451	266

Improvements in agricultural practice.

There has been some improvement in agricultural methods during the last thirty years. This has chiefly taken the form of an increase in the double-cropped area. Wheat has largely taken the place of barley, and maize is more extensively grown. The cultivation of indigo largely extended at one time, but is now practically non-existent. A most important change has been the opening of the Fatehgarh branch of the Upper Ganges Canal, accompanied by the improvement of drainage throughout the District. The cultivators take advances readily under the Agriculturists' Loans Act in adverse seasons, whether wet or dry; more than 1½ lakhs was lent between 1891 and 1904. The amount lent under the Land Improvement Act was only Rs. 90,000, more than half of which was advanced in 1896–7.

Cattle, horses, sheep, and goats.

The breed of cattle is of the ordinary inferior type found throughout the Doāb; but in the Jalesar *tahsīl* the animals are a little better. An attempt has been made to improve the breed of horses and ponies, and since 1894 a Government stallion has been kept. Private persons also maintain two good stallions. The sheep and goats are inferior.

Irrigation.

In the *tarai* irrigation is usually unnecessary, though wells can be readily made when required. The rest of the District is served by the Fatehgarh and Bewar branches of the Lower Ganges Canal, and by the Cawnpore and Etāwah branches of the Upper Ganges Canal. The main channel of the Lower Ganges Canal crosses the Kālī Nadī at Nadrai, near Kāsganj, by a magnificent aqueduct which was carried away by a flood in 1885, but has been rebuilt. Wells can be made in the whole of this tract, except in the high sandy ridges near the rivers, but are often of little use where the subsoil is sandy. In 1902–3 the total area irrigated was 461 square miles, of which wells supplied 254, canals 176, tanks or *jhīls* 18, and rivers 13. In dry years the rivers are used more extensively.

Minerals.

Block *kankar* or calcareous limestone is found in the uplands, and the nodular form occurs in all parts of the

District. Saltpetre, salt, and sulphate of soda are found in saline efflorescences.

The chief industries carried on are cotton-weaving, sugar-refining, glass-making, and the preparation of saltpetre and sulphate of soda. Cotton is woven as a hand industry all over the District. Sugar refineries conducted by native methods are found chiefly in the towns near the *tarai*, where sugar-cane is largely grown. About 250 factories prepare crude saltpetre, the average out-turn at each being approximately 100 maunds. There are also eight refineries, which produce an annual out-turn of nearly 8,000 maunds of refined saltpetre. Sulphate of soda is made at about 80 factories, each producing 200 maunds annually. In 1903 a cotton press employed 128 hands, and three cotton gins 795 hands. Five other factories have been opened since. Arts and manufactures.

Etah has a considerable export trade in agricultural produce. Cotton, wheat, barley, pulses, millet, opium, and sugar are the chief items; but saltpetre and country glass are also exported. The imports include piece-goods, metals, and salt. Most of the foreign traffic is carried by the railway, but a great deal passes by road to and from the adjacent Districts. There is a little traffic on the canal with Alīgarh, Mainpurī, and Cawnpore. Kāsganj and Jalesar are the chief trading centres, and Soron is noted as a place of pilgrimage. Commerce.

The Cawnpore-Achhnerā Railway crosses the District from east to west. A branch line, connecting Kāsganj with Soron on the Būrhigangā, meets at the latter place a branch of the Rohilkhand and Kumaun Railway, which passes across the Ganges to Budaun and Bareilly. The East Indian Railway passes close to the western border of the Jalesar *tahsīl*. The total length of metalled roads is 140 miles, and of unmetalled roads 488 miles. The metalled roads are all in charge of the Public Works department; but the cost of maintaining 87 miles is charged to the District board, which is also in charge of the unmetalled roads. Avenues of trees are maintained on 165 miles. The grand trunk road passes through the District from south-east to north-west, and other metalled roads lead to Agra, Muttra, Mainpurī, and to the Ganges. Railways and roads.

The memory of the famines of 1783–4 and of 1803 long survived in this District. In 1837–8 famine was again severe, and many deaths occurred in spite of relief measures, while the prices of all grain doubled. The next great famine occurred in 1860–1, and was known to the peasantry by the graphic title of 'seven *seer* famine,' as the cheapest food sold at the rate of Famine.

seven *seers* per rupee. In 1868-9 the District escaped from famine, though visited by drought and scarcity; and in 1877-8 canal-irrigation saved a large area of the crops, but distress was felt among the crowds of immigrants who poured in from the tracts south of the Jumna. Before the next famine of 1896-7 canal-irrigation had been largely extended, and, though relief works were opened, the numbers who came to them were small.

District staff.

The Collector is assisted by a member of the Indian Civil Service (when available) and by four Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each *tahsīl*.

Civil justice and crime.

There are three Munsifs, and the whole District is included in the civil and criminal jurisdiction of the Judge of Alīgarh, sessions cases being usually tried by the Additional Judge. Crime is very heavy in Etah, and murders, dacoities, and cattle-thefts are common, besides the more ordinary offences. Cases under the Opium and Excise Acts are also frequent. Female infanticide was formerly rife, but no portion of the population is now under surveillance.

Land revenue administration.

The nucleus of the District was formed out of the surrounding Districts in 1845, and its early fiscal history belongs to Farrukhābād, Budaun, Alīgarh, and Mainpurī. The earliest settlements after acquisition by the British were for short terms, and were based merely on a consideration of the previous demands and a rough estimate of the condition of villages. The first regular settlement under Regulation IX of 1833 was carried out in the Districts named above before Etah became a separate unit, and the revenue assessed was about 7·2 lakhs, excluding the Jalesar *tahsīl*, which was added later. A subsequent revision was made at first by various Collectors, in addition to their ordinary District work, and later by settlement officers, between 1863 and 1873. The methods adopted varied, but agreed in selecting rates of rent for each class of soil, and valuing the 'assets' at these rates, modified by the circumstances of individual villages. The demand so fixed amounted to 9·3 lakhs. In 1879 the Jalesar *tahsīl* was transferred from Agra to this District, the revenue on which amounted to 2·9 lakhs. After heavy rainfall in 1884-6 there was great deterioration in the *tarai* and central tract, and a large area fell out of cultivation and became overgrown with *kāns* (*Saccharum spontaneum*). By 1893 the revenue had been reduced by Rs. 57,000. The latest revision was made between 1902 and 1905. Although the revenue was slightly

raised to 12·4 lakhs, much relief has been afforded by a redistribution of the demand, which now amounts to 48 per cent. of the net 'assets.' Collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue	10,87	9,90	11,33	10,93
Total revenue	14,32	13,85	16,39	16,67

There are four municipalities—KĀSGANJ, JALESAR, SORON, and ETAH—and one 'notified area,' MĀRAHRA, besides thirteen towns administered under Act XX of 1856. Beyond the limits of these, local affairs are managed by the District board, which had an income of Rs. 96,000 in 1903–4, chiefly from rates. The expenditure on roads and buildings was Rs. 51,000. Local self-government.

There are 17 police stations; and the District Superintendent of police commands a force of 4 inspectors, 83 subordinate officers, and 322 men, besides 200 municipal and town police, and over 1,500 rural and road police. The District jail contained a daily average of 267 prisoners in 1903. Police and jails.

Etah takes a low place as regards literacy, and in 1901 only 2·2 per cent. of the population (3·8 males and 0·2 females) could read and write. The number of public schools fell from 155 in 1880–1 to 139 in 1900–1; but the number of pupils increased from 4,306 to 4,585. In 1903–4 there were 229 public schools with 7,179 pupils, of whom 620 were girls, besides 129 private schools with 1,314 pupils. Most of the schools are primary; three are managed by Government, and 136 by the District or municipal boards. Out of a total expenditure on education of Rs. 34,000 in 1903–4, Local funds contributed Rs. 28,000 and fees Rs. 2,500. Education.

There are 10 hospitals and dispensaries, with accommodation for 90 in-patients. In 1903 the number of cases treated was 76,000, of whom 800 were in-patients, and 2,600 operations were performed. The expenditure was Rs. 11,000, chiefly met from Local funds. Hospitals and dispensaries.

About 30,000 persons were successfully vaccinated in 1903–4, representing a proportion of 35 per 1,000 of population. Vaccination is compulsory only in the municipalities. Vaccination.

[S. O. B. Ridsdale, *Settlement Report* (1874); *District Gazetteer* (1876, under revision).]

Etah Tahsīl.—Central *tahsīl* of Etah District, United

Provinces, comprising the *parganas* of Etah-Sakīt, Sonhār, and Mārahra, and lying between 27° 20′ and 27° 47′ N. and 78° 25′ and 78° 56′ E., with an area of 492 square miles. Population increased from 227,030 in 1891 to 259,773 in 1901. There are 463 villages and four towns, the largest of which are ETAH (population, 8,796), the District and *tahsīl* head-quarters, and MĀRAHRA (8,622). The demand for land revenue in 1903–4 was Rs. 4,06,000, and for cesses Rs. 66,000. The density of population, 528 persons per square mile, is above the District average. This *tahsīl* is bounded on the north and east by the Kālī Nadī, while the Isan flows across the southern portion. A small alluvial tract lies on the bank of the Kālī Nadī, from which a gentle slope leads to the upland area. The edge of the slope is sandy, but most of the *tahsīl* is a fertile area which, however, tends to become sandy in the east and is interspersed with stretches of barren *ūsar* land. Ample irrigation is afforded by the main channel of the Lower Ganges Canal and its Bewar branch, and by the Cawnpore and Etāwah branches of the Upper Ganges Canal. The Irrigation department has done much to improve the drainage. In 1898–9 the area under cultivation was 274 square miles, of which 171 were irrigated. Wells supply more than double the area served by canals.

Kāsganj Tahsīl.—Northern *tahsīl* of Etah District, United Provinces, comprising the *parganas* of Ulai, Bilrām, Pachlāna, Soron, Sidhpura, Sahāwar-Karsāna, and Faizpur-Badariā, and lying between 27° 33′ and 28° 2′ N. and 78° 29′ and 78° 59′ E., with an area of 492 square miles. Population increased from 191,625 in 1891 to 265,216 in 1901. There are 468 villages and six towns, the largest of which are KĀSGANJ (population, 19,686), the *tahsīl* head-quarters, SORON (12,175), and SAHĀWAR (5,079). The demand for land revenue in 1903–4 was Rs. 2,91,000, and for cesses Rs. 44,000. The new settlement will raise the demand for revenue to Rs. 3,26,000, and for cesses to Rs. 53,000. The density of population, 539 persons per square mile, is above the District average. Population increased by nearly 28 per cent. between 1891 and 1900, a higher rate of increase than in any other *tahsīl* in the United Provinces. The *tahsīl* is bounded on the north-east by the Ganges and on the south-west by the Kālī Nadī. It thus lies entirely in the *tarai* and in the central *doāb*, which are the most precarious tracts in the District. Heavy rain in 1884–6 led to extensive waterlogging, and the land which fell out of cultivation was overgrown with *kāns* (*Saccharum spontaneum*).

Extensive reductions of revenue were made, and, to prevent further deterioration, the drainage was improved. The Būrhigangā, which lies below the old high bank on the southern edge of the *tarai*, has been deepened and straightened. In 1898–9 the area under cultivation was 347 square miles, of which 108 were irrigated. The *tarai* is so moist that irrigation is not usually required, and the upland area is served by the Lower Ganges Canal and its Fatehgarh branch. Wells supply about half the irrigated area.

Alīganj Tahsīl.—Eastern *tahsīl* of Etah District, United Provinces, comprising the *parganas* of Azamnagar, Barna, Patiālī, and Nidhpur, and lying between 27° 19′ and 27° 54′ N. and 78° 52′ and 79° 17′ E., with an area of 526 square miles. Population increased from 161,994 in 1891 to 205,560 in 1901. There are 379 villages and six towns, the largest of which is ALĪGANJ (population, 5,835), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,11,000, and for cesses Rs. 38,000. The new settlement has raised the demand for revenue to Rs. 2,29,000. The density of population, 391 persons per square mile, is the lowest in the District. The Ganges forms the northern boundary and the Kālī Nadī the southern, and the *tahsīl* thus lies entirely in the most precarious tract in the District. Bordering on the Ganges is a low area of alluvial land, stretching up to the old high bank of the river, below which the Būrhigangā, which has been deepened and straightened, indicates the old bed. The banks of the Ganges and Kālī Nadī are both marked by sandy ridges, and where the rivers approach each other the light soil almost meets. In the east is found a considerable area of rich loam. Heavy rain causes the whole *tahsīl* to deteriorate, and reductions of revenue were made between 1891 and 1893. In 1898–9 the area under cultivation was 287 square miles, of which 85 were irrigated. The Ganges *tarai* does not require irrigation as a rule; but the upland portion is served by the Fatehgarh branch of the Lower Ganges Canal. Wells supply about two-thirds of the irrigated area.

Jalesar Tahsīl.—South-western *tahsīl* of Etah District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 18′ and 27° 35′ N. and 78° 11′ and 78° 31′ E., with an area of 227 square miles. Population increased from 121,030 in 1891 to 133,399 in 1901. There are 156 villages and two towns, including JALESAR (population, 14,348), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,76,000, and for cesses Rs. 45,000;

but under the new settlement these figures will be raised to Rs. 2,88,000 and Rs. 47,000. The density of population, 588 persons per square mile, is the highest in the District. The *tahsīl* forms an almost unbroken plain. The Rind or Arind touches the north-east corner; but the chief river is the Sengar, known in this part of its course also as the Isan. Irrigation is provided by means of the Etāwah branch of the Upper Ganges Canal. The *tahsīl* is generally fertile, but is crossed by a line of sandhills, and is interspersed with patches of barren soil or *ūsar* and marshes. The drainage has recently been improved. In 1898-9 the area under cultivation was 148 square miles, of which 87 were irrigated. The canal serves more than a third of the irrigated area, and wells supply most of the remainder. In dry seasons the Sengar or Isan is largely used as a source of irrigation.

Awa Estate.—A large estate situated in the Districts of Etah, Alīgarh, Mainpurī, Agra, and Muttra, United Provinces, with an area of 265 square miles. The land revenue payable to Government in 1903-4 was 3·3 lakhs, and cesses amounted to Rs. 51,000; the rent-roll was 7·3 lakhs. A small area in Muttra is revenue-free. The family annals commence in the early part of the eighteenth century, when Chaturbhuj, a Jādon Rājput, migrated from Chhāta in Muttra District to Jalesar, and was employed as physician by the local governor. His son, Bijai Singh, obtained a small military command; and the family gained local influence by assisting the *zamīndārs* of adjacent villages, who were involved in pecuniary difficulties. Bakht Singh, son of Bijai Singh, was for a time in the service of Jawāhir Singh, Rājā of Bharatpur, and obtained a number of villages, the profits from which enabled him to enlist a troop of marauding Mewātīs. The Marāthās allowed him to build a fort at Awa. During the Marāthā Wars the head of the family aided Lord Lake, and in 1803 was confirmed in the estate he held. When the Mutiny broke out in 1857 the District officer made over the *pargana* of Jalesar to the Rājā, and requested him to show his loyalty by maintaining Government authority. The confidence was well repaid; the Rājā raised troops, attacked the insurgent villages, collected the revenue, and remitted it to Agra. The present Rājā, Balwant Singh, C.I.E., who was for some time a member of the Legislative Council of the United Provinces, takes a keen interest in the management of his estate. JALESAR is the principal town in the estate, and a cotton gin and press, with the latest machinery, have recently been opened here. The Rājā's residence is at Awa, a small

place in Etah District, 14 miles from Etah town, on a metalled road, with a population (1901) of 2,823. The fort, situated close to the town, is a formidable stronghold, built of mud and brick, and surrounded by a deep moat nearly a mile in circumference. Awa is administered under Act XX of 1856, with an income of about Rs. 900. The town contains a dispensary maintained by the Rājā, and a saltpetre refinery is situated close by. A primary school has about 100 pupils.

Alīganj Town.—Head-quarters of the *tahsīl* of the same name in Etah District, United Provinces, situated in 27° 29′ N. and 79° 11′ E., 34 miles east of Etah on the road to Farrukhābād. Population (1901), 5,835. It was founded by Yakūt Khān, a eunuch in the employ of the Nawāb of Farrukhābād, who was killed in 1748 in battle with the Rohillas, and is buried here. The shops are chiefly of mud, but there are a few large brick-built houses, the residences of the wealthier traders. Alīganj contains a *tahsīlī* and dispensary. It was for some years a municipality, but is now administered under Act XX of 1856 with an income of about Rs. 1,500. There is a small trade in the collection of grain and cotton, which are exported from Thāna-Daryaoganj station on the Cawnpore-Achhnerā Railway, 9 miles away. The town school has 140 pupils.

Etah Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 27° 34′ N. and 78° 41′ E., on the grand trunk road, 19 miles from the Kāsganj station on the Cawnpore-Achhnerā Railway. Population (1901), 8,796. The town is said to have been founded in the fourteenth century by Sangrām Singh, a Chauhān Rājput descended from Prithwī Rāj of Delhi. His descendants occupied the surrounding territory until the Mutiny, when Rājā Damar Singh rebelled. Etah derives its importance chiefly from the presence of the civil station, removed here from Patiālī in 1856 on account of its more central position. The principal market-place, Mayneganj, which has been recently improved and enlarged and is the property of the municipality, perpetuates the name of Mr. F. O. Mayne, C.B., a former Collector. Westward lies the new town with the principal public buildings, a fine temple, school, municipal hall, *tahsīlī*, dispensary and hospital, and the District offices. The site is low and was formerly subject to floods; but a cutting to the Isan river, effected by Mr. Mayne, partially remedied this evil, and an effective drainage scheme has been undertaken by the municipality, through the Canal department. The American

Methodist and Presbyterian Missions are both represented. Etah has been a municipality since 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 12,500. In 1903–4 the income was Rs. 21,000, chiefly from octroi (Rs. 14,000); and the expenditure was Rs. 23,000. There is a good deal of road traffic through the town, and eight commodious *sarais* provide for this. The *tahsīlī* school has about 200 pupils, and the municipality maintains one school and aids nine others with 340 pupils.

Jalesar Town.—Head-quarters of the *tahsīl* of the same name in Etah District, United Provinces, situated in 27° 28′ N. and 78° 19′ E., on the road from Muttra to Etah town, 8½ miles from the Jalesar Road station on the East Indian Railway. Population (1901), 14,348. The town consists of two parts, the fort and the lower town. The fort is said to have been erected by a Rānā of Mewār in the fifteenth century; but nothing remains of the buildings except a mound on which the *tahsīlī*, *munsifī*, police station, and municipal hall now stand. The lower town is a collection of narrow streets and lanes, the drainage of which was very defective, but the municipality has completed an effective drainage scheme, through the Canal department. The streets are well paved and there is a dispensary. Jalesar has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 10,000. In 1903–4 the income was Rs. 14,000, chiefly from octroi (Rs. 11,000); and the expenditure was Rs. 13,000. There is not much trade; but cotton cloth, glass bangles, and pewter ornaments are made, and the largest saltpetre factory in the District is situated here. The Rājā of Awa has opened a cotton gin, which employed 125 hands in 1903. A *tahsīlī* school has about 130 pupils, and the municipality maintains two schools and aids six others with a total attendance of 331.

Kāsganj Town.—Head-quarters of the *tahsīl* of the same name in Etah District, United Provinces, situated in 27° 48′ N. and 78° 39′ E., on the Cawnpore-Achhnerā Railway, and also on the road from Muttra to Bareilly. A short branch railway connects Kāsganj with Soron near the Ganges, and an extension to Bareilly is under construction. This is the chief trade centre of the District, and population is increasing: (1891) 16,050, (1901) 19,686. The town is said to have been founded by Yakūt Khān, a eunuch in the service of Muhammad Khān, Nawāb of Farrukhābad. It afterwards came into the hands of Colonel James Gardner, who was in the employ of the

Marāthās, and later in British service. He raised a regiment, now known as Gardner's Horse, and acquired a large property which was dissipated by his descendants. Part of the property fell into the hands of Dilsukh Rai, once an agent to the Gardner family, and one of his descendants has built a magnificent residence near the town. Kāsganj stands on an elevated site, its drainage flowing towards the Kālī Nadī, which runs about a mile south-east of the town. A new drainage scheme has recently been completed. The town contains two fine bazars crossing each other at right angles. At the junction a fine octagonal building, consisting of shops, forms a suitable centre to the town. The chief public buildings are the town hall, dispensary, *tahsīlī*, and *munsifī*. There are also branches of the Church Missionary Society and the American Methodist Mission. Close to the railway station is a considerable colony of railway employés. The town was constituted a municipality in 1868. During the ten years ending 1901 the income and expenditure averaged Rs. 15,000. In 1903-4 the income was Rs. 22,000, chiefly derived from octroi (Rs. 16,000); and the expenditure was Rs. 23,000. Kāsganj is becoming an important centre for the collection and distribution of country produce, especially grain, sugar, and cotton. Sugar-refining is a growing industry, and there were two cotton gins and a cotton press which employed 788 hands in 1903, while another ginning factory was opened in 1904. The town school has about 190 pupils, and 16 other schools aided by the municipality have 420 pupils.

Mārahra (or Mārhara).—Town in the District and *tahsīl* of Etah, United Provinces, situated in 27° 44′ N. and 78° 35′ E., on the Cawnpore-Achhnerā Railway. Population (1901), 8,622. The Musalmān residents, who form more than half the total population, have great influence throughout the District. The name is said to be derived from the mythical destruction of a former village (*mār*, 'killing' and *hara*, 'green,' i.e. jungle). During Akbar's reign the town was the head-quarters of a *dastūr*. In the eighteenth century it belonged to the Saiyids of Bārha in Muzaffarnagar, and then passed to the Nawābs of Farrukhābād and of Oudh. The town is scattered and of poor appearance, but contains the ruins of two seventeenth-century tombs, and another tomb and a beautiful mosque built in 1729 and 1732 respectively. There is also a dispensary. Mārahra was a municipality from 1872 to 1904, with an income and expenditure of about Rs. 5,000, chiefly derived from octroi. It has now been constituted a 'notified area,' and octroi has

been abolished. The trade is entirely local, but glass bangles are made. Mārahra contains four schools with 100 pupils, and a small branch of the Alīgarh College.

Sahāwar.—Town in the Kāsganj *tahsīl* of Etah District, United Provinces, situated in 27° 48′ N. and 78° 51′ E., near the Ganeshpur station on the Cawnpore-Achhnerā Railway. Population (1901), 5,079. The town was founded by Rājā Naurang Deo, a Chauhān Rājput, who called it Naurangābād after his own name. On being attacked by the Musalmāns, the Rājā fled to Sirhpura, and the inhabitants who remained were forcibly converted to Islām. Shortly afterwards Naurang, assisted by the Rājā and the people of Sirhpura, expelled the Musalmāns, and changed the name to Sahāwar. The town is administered under Act XX of 1856, with an income of about Rs. 700. There is very little trade. The primary school has about 80 pupils.

Soron.—Town in the Kāsganj *tahsīl* of Etah District, United Provinces, situated in 27° 54′ N. and 78° 45′ E., on the Būrhigangā, an old bed of the Ganges. It is the junction of a branch of the Cawnpore-Achhnerā Railway from Kāsganj with a branch of the Rohilkhand and Kumaon Railway which passes through Budaun to Bareilly. Population (1901), 12,174. Soron is a place of considerable antiquity. According to tradition it was known as Ukala-kshetra, but after the destruction of the demon, Hiranya Kasyapa, by Vishnu, in his boar incarnation, the name was changed to Sūkara-kshetra (*Sūkar* or 'wild boar'). A mound, known as the *kila* or fort, marks the site of the ancient town. A temple dedicated to Sītā and Rāma, and the tomb of a Muhammadan saint, Shaikh Jamāl, stand on the mound; but large antique bricks strew the ground on all sides, and the foundations of walls may be traced throughout. The temple was destroyed during the fanatical reign of Aurangzeb, but restored towards the close of the last century by a wealthy Baniā, who built up the vacant interstices between the pillars with plain white-washed walls. The architectural features of the pillars resemble those of the quadrangle near the Kutb Minār at Delhi. Numerous inscriptions by pilgrims in the temple bear date from A.D. 1169[1] downward. Soron lies on the old route from the foot of the hills to Hāthras and Agra, and has some pretensions as a trading mart; but it is chiefly important for its religious associations and as the scene of frequent pilgrim fairs. Up to the seventeenth century the Ganges flowed in the channel now known as the Būrhigangā;

[1] A. Cunningham, *Archaeological Survey Reports*, vol. i, p. 267.

and devout Hindus, after visiting Muttra, come on to Soron to bathe in the latter, which here forms a considerable pool, lined with handsome temples and *ghāts*. The pool is now fed by an irrigation channel. The most important bathing, however, takes place in the Ganges itself, 4 miles north of Soron. The road to Budaun crosses the Būrhigangā by a fine stone bridge. There are many substantial houses and fifty or sixty temples shaded by fine *pīpal* trees, and thirty large *dharmsālas* or resthouses for pilgrims; some of these, exquisitely carved in Agra stone, attest the wealth and piety of pilgrims from the Native States of Gwalior and Bharatpur. The town also contains a dispensary, a municipal hall, and a branch of the Church Missionary Society. Soron has been a municipality since 1868. During the ten years ending 1901 the income and expenditure averaged Rs. 10,000. In 1903-4 the income was Rs. 15,000, chiefly derived from octroi (Rs. 8,000); and the expenditure was Rs. 20,000. The trade is largely devoted to supplying the wants of the pilgrims; but sugar-refining is increasing in importance, and a great deal of cotton yarn is spun here as a hand industry. The municipality supports two schools and aids two others with a total attendance of 243 pupils.

BAREILLY DIVISION

Bareilly Division.—North central Division of the United Provinces, lying below the Himālayas and between 27° 35′ and 29° 58′ N. and 78° and 80° 27′ E. It is bounded on the north by the sub-Himālayan tract of the Kumaun Division and by Nepāl; on the west and south by the Ganges, which divides it from the Meerut and Agra Divisions; and on the east by the Lucknow Division of Oudh. The RĀMPUR STATE forms a wedge of territory between the Districts of Morādābād and Bareilly, and political control is exercised by the Commissioner of this Division, whose head-quarters are at Bareilly city. Population decreased between 1872 and 1881, but has increased considerably since. The numbers at the four enumerations were as follows: (1872) 5,252,325, (1881) 5,122,557, (1891) 5,344,054, and (1901) 5,479,688. The total area is 10,720 square miles, and the density of population 511 persons per square mile, compared with 445 for the Provinces as a whole. The Division is the sixth largest in area and the sixth in population in the United Provinces. In 1901 Hindus formed nearly 75 per cent. of the total, and Musalmāns 24 per cent., while the other religions most largely represented were Christians (24,459, of whom 21,421 were natives), Aryas (14,993), Sikhs (3,334), and Jains (2,016). The Division includes six Districts, as shown below:—

	Area in square miles.	Population, 1901.	Land revenue and cesses for 1903-4, in thousands of rupees.
Bareilly	1,580	1,090,117	17,47
Bijnor	1,791	779,951	16,63
Budaun	1,987	1,025,753	14,98
Morādābād	2,285	1,191,993	17,38
Shāhjahānpur	1,727	921,535	13,40
Pīlībhīt	1,350	470,339	8,39
Total	10,720	5,479,688	88,25

The northern portions of each of these Districts, except Budaun, reach to the damp submontane area called the *tarai*;

and the Division generally is a fertile tract, especially noted for the production of sugar-cane. There are 65 towns and 11,403 villages. The largest towns are BAREILLY (131,208 with cantonments), SHĀHJAHĀNPUR (76,458 with cantonments), MORĀDĀBĀD (75,128), AMROHA (40,077), SAMBHAL (39,715), BUDAUN (39,031), PĪLĪBHĪT (33,490), CHANDAUSĪ (25,711), and NAGĪNA (21,412). The chief places of commercial importance are Bareilly, Shāhjahānpur, Morādābād, Pīlībhīt, Chandausī, and TILHAR. Sugar and grain are dealt with also in many smaller places. Although ancient sites occur in many parts of the Division, RĀMNAGAR is the only one which has been even partially explored. BUDAUN and SAMBHAL were early seats of Muhammadan governors; and BAREILLY, PĪLĪBHĪT, RĀMPUR, and AONLA were important centres during the Rohilla rule in the eighteenth century. (See ROHILKHAND.)

Bareilly District (*Barelī*).—District in the Bareilly or Rohilkhand Division, United Provinces, lying between 28° 1′ and 28° 54′ N. and 78° 58′ and 79° 47′ E., with an area of 1,580 square miles. It is bounded on the north by Nainī Tāl; on the east by Pīlībhīt and Shāhjahānpur; on the south by Shāhjahānpur and Budaun; and on the west by Budaun and the State of Rāmpur. The District of Bareilly, though lying not far from the outer ranges of the Himālayas, is a gently sloping plain, with no greater variety of surface than is caused by the shifting channels of its numerous streams. Water lies almost everywhere near the surface, giving it a verdure that recalls the rice-fields of Bengal. The most prominent physical feature is the RĀMGANGĀ River, which traverses the south-western portion. Its channel has a well-defined bank at first on the south, and later on the north; but except where the stream is thus confined, the *khādar* or lowland merges imperceptibly into the upland, and the river varies its course capriciously through a valley 4 or 5 miles wide, occasionally wandering to a still greater distance. North of the Rāmgangā are numerous streams running south to meet that river. The chief of these (from west to east) are the Dojorā, which receives the Kichhā or West Bahgul, the Deoraniān, the Nakatiā, and the East Bahgul, which receives the Pangailī. The Deohā forms the eastern boundary for some distance. The gentle slope of the country makes it possible to use these rivers for irrigation in the upper part of their courses. Lower down, and more especially in the east of the District, they flow below the general level and are divided by elevated watersheds of sandy plains.

Boundaries, configuration, and river system.

Geology. The District exposes nothing but alluvium, in which even *kankar*, or calcareous limestone, is scarce.

Botany. The flora resembles that of the Gangetic plain generally. In the north a few forest trees are found, the *semal* or cotton tree (*Bombax malabaricum*) towering above all others. The rest of the District is dotted with fine groves of mangoes, while the *jāmun* (*Eugenia Jambolana*), *shīsham* (*Dalbergia Sissoo*), tamarind, and various figs (*Ficus glomerata, religiosa, infectoria*, and *indica*) are common. Groves and villages are often surrounded by bamboos, which flourish luxuriantly. The area under trees, which is increasing, amounts to about 32 square miles.

Fauna. Leopards are frequently found in the north of the District, and wolves are common in the east. Antelope are seen in some localities, and *pārha* or hog deer haunt the beds of rivers. The ordinary game-birds are found abundantly, and fish are plentiful. Snakes are also very numerous.

Climate and temperature. The climate of the District is largely influenced by its proximity to the hills, Bareilly city and all the northern *parganas* lying within the limits of the heavier storms. The rainy season begins earlier and continues later than in the south, and the cold season lasts longer. The north of the District is unhealthy, on account of excessive moisture and bad drinking-water. The mean temperature varies from 54° to 60° in January, and from 85° to 93° in May, the hottest month.

Rainfall. The annual rainfall in the whole District averages nearly 44 inches; but while the south-west receives only 39, the fall amounts to nearly 47 inches in the north and exceeds 48 in the north-east. Fluctuations from year to year are considerable; in 1883 less than 19 inches was received, and in 1894 nearly 65 inches.

History. Before the Christian era the District was included in the kingdom of Northern PANCHĀLA; and the names are known, from coins found at RĀMNAGAR, of a number of kings who probably reigned in the second century B.C. These kings were connected by marriage with a dynasty ruling in the south of Allahābād, and it has been suggested they were the Sunga kings of the Purānas[1]. A kingdom called Ahīchhattra, in or near this District, was visited by Hiuen Tsiang in the seventh century A.D., and is described as flanked by mountain crags. It produced wheat and contained many woods and fountains, and the climate was soft and agreeable.

In the early Muhammadan period the tract now known as

[1] *Journal, Asiatic Society of Bengal*, 1897, p. 303; A. Cunningham, *Coins of Ancient India*.

Rohilkhand was called Katehr, and the Rājputs who inhabited it gave continual trouble. Shahāb-ud-dīn, or his general Kutb-ud-dīn, captured Bangarh in Budaun District about the year 1194; but nothing more is heard of the Muhammadans in this neighbourhood till Mahmūd II made his way along the foot of the hills to the Rāmgangā in 1252. Fourteen years later, Balban, who succeeded him, marched to Kampil, put all the Hindus to the sword, and utterly crushed the Katehriyās, who had hitherto lived by violence and plunder. In 1290 Sultān Fīroz invaded Katehr again, and brought the country into final subjection to Musalmān rule, which was not afterwards disputed except by the usual local revolts. Under the various dynasties which preceded the Mughal empire, the history of Katehr consists of the common events which make up the annals of that period: constant attempts at independence on the part of the district governors, followed by barbarous suppressions on the part of the central authority. The city of Bareilly itself was founded in 1527 by Bās Deo and Barel Deo, from the latter of whom it takes its name. It was, however, of small importance till the reign of Shāh Jahān, when it took the place of Budaun. In 1628 Alī Kulī Khān was governor of Bareilly, which had grown into a considerable place. In 1657 Rājā Makrand Rai founded the new city of Bareilly, cut down the forest to the west of the old town, and expelled all the Katehriyās from the neighbourhood. A succession of regular governors followed during the palmy days of the great Mughal emperors; but after the death of Aurangzeb, in 1707, when the unwieldy organization began to break asunder, the Hindus of Bareilly threw off the imperial yoke, refused their tribute, and commenced a series of anarchic quarrels among themselves for supremacy.

Their dissensions only afforded an opportunity for the rise of a new Muhammadan power. Alī Muhammad Khān, a leader of Rohilla Pathāns, defeated the governors of Bareilly and Morādābād, and made himself supreme throughout the whole Katehr region. In 1744 the Rohilla chieftain conquered Kumaun right up to Almorā; but two years later the emperor Muhammad Shāh marched against him, and Alī Muhammad was taken a prisoner to Delhi. However, the empire was too much in need of vigorous generals to make his captivity a long one, and in 1748 he was restored to his old post in Katehr. Next year he died, and a mausoleum at Aonla, in this District, still marks his burial-place. Hāfiz Rahmat Khān, guardian to his sons, succeeded to the governorship of Rohilkhand, in spite of the crafty designs of Safdar Jang of Oudh, who dispatched

the Nawāb of Farrukhābād against him without effect. Hāfiz Rahmat Khān defeated and slew the Nawāb, after which he marched northward and conquered Pīlībhīt and the Tarai. The Oudh Wazīr, Safdar Jang, plundered the property of the Farrukhābād Nawāb after his death, and this led to a union of the Rohilla Afghāns with those of Farrukhābād. Ahmad Khān of Farrukhābād defeated Nawal Rai, the deputy of Safdar Jang, besieged Allahābād, and took part of Oudh; but the Wazīr called in the aid of the Marāthās, and with them defeated Ahmad Khān and the Rohillas at Fatehgarh and at Bisaulī, near Aonla. He then besieged them for four months at the foot of the hills; but owing to the invasion of Ahmad Shāh Durrāni terms were arranged, and Rahmat Khān became the *de facto* ruler of Rohilkhand.

After the accession of Shujā-ud-daula as Nawāb of Oudh, Rahmat Khān joined the imperial troops in their attack upon that prince, but the Nawāb bought them off with a subsidy of 5 lakhs. Rahmat Khān took advantage of the victory at Pānīpat in 1761 to make himself master of Etāwah, and during the eventful years in which Shujā-ud-daula was engaged in his struggle with the British power, he continually strengthened himself by fortifying his towns and founding new strongholds. In 1770 Najīb-ud-daula advanced with the Marāthā army under Sindhia and Holkar, defeated Rahmat Khān, and forced the Rohillas to ask the aid of the Wazīr. Shujā-ud-daula became surety for a bond of 40 lakhs, by which the Marāthās were induced to evacuate Rohilkhand. This bond the Rohillas were unable to meet, whereupon Shujā-ud-daula, after getting rid of the Marāthās, attacked Rohilkhand with the help of a British force lent by Warren Hastings, and subjugated it by a desolating war. Rahmat Khān was slain, but Faiz-ullah, the son of Alī Muhammad, escaped to the north-west and became the leader of the Rohillas. After many negotiations he effected a treaty with Shujā-ud-daula in 1774, by which he accepted nine *parganas* worth 15 lakhs a year, giving up all the remainder of Rohilkhand to the Wazīr (see RĀMPUR STATE). Saādat Alī was appointed governor of Bareilly under the Oudh government. In 1794 a revolution in Rāmpur State led to the dispatch of British troops, who fought the insurgents at Bhitaura or Fatehganj (West), where an obelisk still commemorates the slain. The District remained in the hands of the Wazīr until 1801, when Rohilkhand, with Allahābād and Korā, was ceded to the British in lieu of tribute. Mr. Henry Wellesley, brother of the Governor-General, was appointed President of the Board of

Commissioners sitting at Bareilly, and afterwards at Farrukhābād. In 1805 Amīr Khān, the Pindāri, made an inroad into Rohilkhand, but was driven off. Disturbances occurred in 1816, in 1837, and in 1842; but the peace of the District was not seriously endangered until the Mutiny of 1857.

In that year the troops at Bareilly rose on May 31. The European officers, except three, escaped to Nainī Tāl; and Khān Bahādur, Hāfiz Rahmat Khān's grandson, was proclaimed Nawāb Nāzim of Rohilkhand. On June 11 the mutinous soldiery went off to Delhi, and Khān Bahādur organized a government in July. Three expeditions attempted to attack Nainī Tāl, but without success. In September came news of the fall of Delhi. Walīdād Khān, the rebel leader in Bulandshahr, and the Nawāb of Fatehgarh then took refuge at Bareilly. A fourth expedition against Nainī Tāl met with no greater success than the earlier attempts. On March 25, 1858, the Nāna Sāhib arrived at Bareilly on his flight from Oudh, and remained till the end of April; but the rebellion at Bareilly had been a revival of Muhammadan rule, and when the commander-in-chief marched on Jalālābād, the Nāna Sāhib fled back again into Oudh. On the fall of Lucknow, Fīroz Shāh retired to Bareilly, and took Morādābād on April 22, but was compelled to give it up at once. The Nawāb of Najībābād, leader of the Bijnor rebels, joined him in the city, so that the principal insurgents were congregated together in Bareilly when the English army arrived on May 5. The city was taken on May 7, and all the chiefs fled with Khān Bahādur into Oudh.

Archaeology. Ahīchhattra or RĀMNAGAR is the only one of many ancient mounds in the District which has been explored. It yielded numerous coins and some Buddhist sculptures. It is still a sacred place of the Jains. The period of Rohilla rule has left few buildings of importance; but some tombs and mosques are standing at AONLA and BAREILLY.

The people. There are 12 towns and 1,924 villages. Population has risen steadily during the last thirty years. The numbers at the four enumerations were as follows: (1872) 1,015,041, (1881) 1,030,936, (1891) 1,040,949, and (1901) 1,090,117. The District is divided into six *tahsīls*—FARĪDPUR, BAREILLY, AONLA, MĪRGANJ, BAHERĪ, and NAWĀBGANJ — the headquarters of each being at a place of the same name. The principal towns are the municipality of BAREILLY and AONLA. The table on the next page gives the chief statistics of area and population in 1901.

Hindus form 75 per cent. of the total and Musalmāns

24 per cent., while Christians number 7,148 and Aryas 1,228. The density is much higher than the Provincial average, and the rate of increase between 1891 and 1901 was larger than in most parts of the United Provinces. More than 99 per cent. of the population speak Western Hindī, the ordinary dialect being Braj.

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Farīdpur	249	2	314	128,861	518	+ 7.6	2,635
Bareilly	310	1	414	325,650	1,050	+ 9.1	17,111
Aonla	306	3	320	211,836	692	+ 8.1	4,913
Mīrganj	149	1	158	103,198	640	+ 8.3	1,225
Baherī	345	2	410	193,412	561	− 6.6	2,522
Nawābganj	221	3	308	127,160	575	+ 2.2	1,404
District total	1,580	12	1,924	1,090,117	690	+ 4.7	29,810

Castes and occupations.

The most numerous Hindu caste is that of Chamārs (leather-workers and cultivators), 100,000. Other castes numerically strong in this District are: Kurmīs (agriculturists), 94,000; Muraos (market-gardeners), 73,000; Kisāns (cultivators), 67,000; and Kahārs (cultivators and water-carriers), 56,000. Brāhmans number 48,000 and Rājputs 38,000. Ahars, who are found only in Rohilkhand, but are closely allied to the Ahīrs of the rest of the Provinces, number 46,000. Daleras (1,724), who are nominally basket-makers but in reality thieves, are not found outside this District. Among Muhammadans, Shaikhs number 54,000; Julāhās (weavers), 41,000; and Pathāns, 41,000. The Mewātīs, who number 9,000, came from MEWĀT in the eighteenth century, owing to famine. Banjārās, who were formerly sutlers and are still grain-carriers, have now settled down as agriculturists, chiefly in the submontane Districts, and number 9,000 here. About 66 per cent. of the population are supported by agriculture, 6 per cent. by personal services, and 4 per cent. by general labour. Cotton-weaving by hand supports 3.5 per cent. Rājputs, Pathāns, Brāhmans, Kāyasths, and Baniās are the largest landholders. Kurmīs occupy nearly a quarter of the total area as cultivators, while Ahars, Kisāns, and Brāhmans each cultivate about 7 or 8 per cent.

stian ions.

There were 4,600 native Christians in 1901, of whom 4,488 were Methodists. The American Methodist Episcopal

Mission was opened here in 1859, and has ten stations in the District, besides a theological college at Bareilly city.

General agricultural conditions.

The north of the District contains a damp unhealthy tract, where rent rates are low and population is sparse, while cultivation depends largely on the season. The central portion is extremely fertile, consisting chiefly of loam, with a considerable proportion of clay in the Mīrganj and Nawābganj *tahsīls*. In the south, watersheds of sandy soil divide the rivers; but these sandy strips are regularly cultivated in the Bareilly and Aonla *tahsīls*, while in Farīdpur much of the light soil is very poor and liable to be thrown out of cultivation after heavy rain. The alluvial strip along the Rāmgangā is generally rich, but is occasionally ruined by a deposit of sand. Excluding garden cultivation, manure is applied only when the turn comes round for sugar-cane to be grown, at intervals of from 3 to 8 years.

Chief agricultural statistics and principal crops.

The tenures are those common to the United Provinces. *Zamīndāri* or joint *zamīndāri* tenures prevail in 5,547 *mahāls*, 503 are perfect or imperfect *pattīdāri*, and 36 are *bhaiyāchārā*. The District is thus chiefly held by large proprietors. The main agricultural statistics for 1903-4 are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Farīdpur	249	196	34	19
Bareilly	310	240	50	20
Aonla	306	240	56	27
Mīrganj	149	111	17	14
Baherī	345	258	44	31
Nawābganj	221	178	55	12
Total	1,580	1,223	256	123

The principal food-crops, with their areas in square miles in 1903-4, are: rice (237), wheat (368), gram (201), *bājra* (166), and maize (115). Sugar-cane covers 71 square miles, and is one of the most important products; while poppy (23), oilseeds (27), cotton (13), and *san*-hemp (10), are also valuable crops.

Improvements in agricultural practice.

The total cultivated area has not varied much during the last thirty years; but there has been a permanent increase to the west of Aonla and north of Farīdpur *tahsīls*, which is counterbalanced by a temporary decrease in the north of the District owing to vicissitudes of the seasons. The principal changes in cultivation have been directed towards the substitution of more valuable crops for inferior staples. The

area under *bājra* has decreased, while sugar-cane, rice, and maize are more largely grown. Poppy has been reintroduced recently, and the area sown with it is increasing. A rise in the area producing barley and gram points to an increase in the area double cropped. Very few loans are taken under the Land Improvement Loans Act; between 1890 and 1903 the total amounted to Rs. 41,000, of which Rs. 38,000 was advanced in the famine year, 1896–7. Nearly 1½ lakhs was lent under the Agriculturists' Loans Act, of which Rs. 63,000 was advanced in 1896–7. In good seasons the advances are small.

Cattle, horses, and sheep.

The cattle used for agricultural purposes are chiefly bred in the District or imported from the neighbouring submontane tracts, those bred in Pīlībhīt being called *panwār*. These varieties are small but active, and suffice for the shallow ploughing in vogue. Stronger animals, used in the well-runs in the south-west of the District, are imported from west of the Jumna. Horse-breeding is confined to the Rāmgangā and Aril basins, where wide stretches of grass and in some places a species of *Oxalis* resembling clover are found. Four horse and two donkey stallions are maintained by Government and by the District board, and two donkey stallions are kept on estates under the Court of Wards to encourage mule-breeding. There has, however, been little progress in either horse or mule-breeding. Sheep are not kept to any great extent.

Irrigation.

The soil of the District is generally moist, and in ordinary seasons there is very little demand for irrigation of the spring crops. In the north, where a regular supply of water is valued for rice and sugar-cane, the Rohilkhand canals are the main source. Elsewhere, wells, rivers, and *jhīls* are used. In 1903–4 canals and wells supplied 76 and 75 square miles respectively, tanks or *jhīls* 58, and other sources (chiefly rivers) 47. The canals are all small works and may be divided into two classes. Those drawn from the Bahgul, Kailās, Kichhā, and Paha have permanent masonry head-works, with channels dug to definite sections, and are provided with subsidiary masonry works, regulators, &c., like the regular canals of the Doāb. The others are small channels, into which water is turned from the rivers by earthen dams, renewed annually. Masonry wells are not constructed for irrigation, except by the Court of Wards. In most parts of the District the wells are temporary excavations worked by pulley, or by a lever, as the spring-level is high; but in some tracts to the south water is raised in a leathern bucket by a rope pulled by bullocks or by men.

Kankar or nodular limestone is comparatively scarce and of poor quality. A little lime is made by burning the ooze formed of lacustrine shells. Minerals.

The most important industry of the District is sugar-refining. This is carried on after native methods, which are now being examined by the Agricultural department in the hope of eliminating waste. Coarse, cotton cloth and cotton carpets or *darīs* are woven largely, and Bareilly city is noted for the production of furniture. A little country glass is also manufactured. The Rohilkhand and Kumaun Railway workshops employed 81 hands in 1903, and a brewery in connexion with that at Nainī Tāl is under construction. The indigo industry is declining. Arts and manufactures.

Grain and pulse, sugar, hides, hemp, and oilseeds are the chief exports, while salt, piece-goods, metals, and stone and lime are imported. The grain is exported to Calcutta, while sugar is sent to the Punjab, Rājputāna, and Central India. Bareilly city and Aonla are the chief centres of trade. Commerce.

The main line of the Oudh and Rohilkhand Railway passes through the south of the District, with a branch from Bareilly city through Aonla to Alīgarh. The north is served by the Rohilkhand and Kumaun Railway, which is the only route to the hill station of Nainī Tāl, and by a line through Pīlībhīt and Sītāpur to Lucknow, which leaves the Rohilkhand and Kumaun Railway at Bhojupura, a few miles north of Bareilly city. Another metre-gauge line, recently opened, leads from Bareilly south-west through Budaun to Soron in Etah District. Railways and roads.

The total length of metalled roads is 139 miles, and of unmetalled roads 186 miles. Of the former, 125 miles are in charge of the Public Works department, but the cost of all but 88 miles is met from Local funds. There are avenues of trees along 254 miles. The District is not well supplied with roads. Those which are metalled follow roughly the alignment of the railways, and there are no others, except the road from Aonla to Budaun. In the north communications are almost impossible during the rains; but the streams can easily be forded in the hot and cold seasons.

Bareilly is not liable to severe famine, owing to the natural moisture of the soil and the rarity of so complete failure of the rains as occurs elsewhere. It is also well served by railways, and a considerable portion can be irrigated. Ample grazing-grounds for cattle are within easy reach. In 1803–4 distress was felt, and the spring crops were grazed by the cattle as no grain had formed. In 1819 and 1825–6 there was scarcity. Famine.

The famine of 1837–8 followed a succession of bad years, and its effects were felt, but not so severely as in the Doāb. While famine raged elsewhere in 1860–1, Bareilly suffered only from slight scarcity, owing to the failure of the autumn crop, and relief works, which were opened for the first time, alleviated distress. Relief works were also necessary in 1868–9, 1877–8, and 1896–7, but the numbers attracted to them never rose very high.

District staff. The Collector is usually assisted by a member of the Indian Civil Service, and by four Deputy-Collectors recruited in India There is a *tahsīldār* at the head-quarters of each *tahsīl*. The Executive Engineer of the Rohilkhand division (Roads and Buildings) and the Executive Engineer of the Rohilkhand Canals are stationed at Bareilly.

Civil justice and crime. There are three regular District Munsifs and a Subordinate Judge, and the appointment of village Munsifs commenced recently. The District and Sessions Judge of Bareilly has civil and criminal jurisdiction in both Bareilly and Pīlībhīt Districts. Crime is very heavy, especially offences affecting life and grievous hurt. Religious feeling runs high, and quarrels between Hindus and Muhammadans, accompanied by serious rioting, are not infrequent. The thieving caste of Daleras has already been mentioned. Female infanticide is now very rarely suspected, and in 1904 only 130 names remained on the registers of proclaimed families.

Land revenue administration. Under the Rohillas proprietary rights did not exist, and villages were farmed to the highest bidder. After annexation in 1801 Rohilkhand was divided into two Districts, Morādābād and Bareilly. The Shāhjahānpur District was formed in 1813–4; Budaun was carved out of both the original Districts in 1824; the south of Nainī Tāl District was taken away in 1858, and sixty-four villages were given, as a reward for loyalty, to the Nawāb of Rāmpur. Pīlībhīt was made a separate District in 1879. In the early short-term settlements the Rohilla system of farming was maintained till 1812, when proprietary rights were conferred on persons who seemed best entitled to them. The demand then fixed was so high that heavy balances were frequent, and many estates were abandoned. A more enlightened method of settlement based on a survey was commenced under Regulation VII of 1822, and the first regular settlement followed under Regulation IX of 1833. Different methods were adopted by the officers who carried this out. Some divided each village into circles according to soil and situation, while others classified villages accord-

ing to their general condition as a whole. Rent rates were sometimes assumed for the various soils, while in other cases general revenue rates were deduced from the collections in previous years. The revenue fixed amounted to 11 lakhs on the present area. Another settlement was made in 1867–70. The rental 'assets' were calculated from rent rates selected after careful inquiry. A large area was grain-rented; and the rent rates for this tract were selected after an examination of the reputed average share of the landlord, and after experiments in the out-turn of various crops, the average prices for twenty years being applied to ascertain the cash value. The result was an assessment of 13·5 lakhs; but this was reduced by about Rs. 4,000 in 1874–6, owing to the assessment of too large an area in the north of the District, where cultivation fluctuates. The latest revision was carried out in 1898–1902. Cash rents were then found to be paid on about two-thirds of the total cultivated area, and the actual rent-roll formed the basis of assessment. Rents of occupancy tenants had remained for the most part unaltered since the previous settlement, and enhancements were given where they were inadequate. Grain rents, chiefly found in the north of the District, were largely commuted to cash rates. The demand fixed amounts to 15 lakhs, representing 45 per cent. of the net 'assets,' and the incidence falls at Rs. 1·7 per acre, varying from Rs. 1·3 to Rs. 2 in different parts. Collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue	13,14	12,93	15,44	14,94
Total revenue	16,67	20,45	25,13	26,01

There is one municipality, BAREILLY, and ten towns are administered under Act, XX of 1856. Outside of these, local affairs are managed by the District board, which has an income of 1·7 lakhs, chiefly from rates. In 1903–4 the expenditure on roads and buildings amounted to Rs. 63,000. Local self-government.

There are 22 police stations and 19 outposts, all but one of the latter being in Bareilly city. The District Superintendent of police has under him an assistant and 4 inspectors, besides a force of 112 subordinate officers and 587 men of the regular police, 374 municipal and town police, and 1,989 village and road *chaukīdārs*. The Central jail, which has accommodation for more than 3,000 prisoners, contained a daily average of nearly 1,800 in 1903, while the District jail contained 715. Police and jails.

The latter was formerly used for convicts from Nainī Tāl and from Pīlībhīt, and is a central jail for female prisoners.

Education. The District takes a medium place as regards the literacy of its inhabitants, of whom 2·7 per cent. (4·7 males and 0·6 females) can read and write. The number of public institutions increased from 143 in 1880–1 to 154 in 1900–1, and the number of pupils from 5,033 to 6,675. In 1903–4 there were 196 such institutions, with 9,636 pupils, of whom 996 were girls, besides 163 private schools with 2,479 pupils. Of the total, 3 were managed by Government and 136 by the District and municipal boards, while 55 were aided. There is an Arts College at Bareilly city. In 1903–4 the total expenditure on education was a lakh, of which Rs. 53,000 was derived from Local and municipal funds, Rs. 23,000 from fees, and Rs. 12,000 from Provincial revenues.

Hospitals and dispensaries. There are 13 hospitals and dispensaries, with accommodation for 287 in-patients. In 1903 the number of cases treated was 114,000, of whom 3,068 were in-patients, and 2,815 operations were performed. The expenditure was Rs. 30,000, most of which was met from Local and municipal funds. There is a lunatic asylum at Bareilly city with about 400 inmates.

Vaccination. In 1903–4 the number of persons successfully vaccinated was 36,000, representing a proportion of 33 per 1,000 of the population. Vaccination is compulsory only in Bareilly city.

[*District Gazetteer* (1879, under revision); S. H. Fremantle, *Settlement Report* (1903).]

Farīdpur Tahsīl.—South-eastern *tahsīl* of Bareilly District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 1′ and 28° 22′ N. and 79° 23′ and 79° 45′ E., with an area of 249 square miles. Population increased from 119,805 in 1891 to 128,861 in 1901. There are 314 villages and two towns, including FARĪDPUR (population, 6,635), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 1,84,000, and for cesses Rs. 30,000. The density of population, 518 persons per square mile, is the lowest in the District. On the south-west the Rāmgangā river divides the *tahsīl* from Budaun, while the East Bahgul crosses it from north to south. Farīdpur is the most unproductive part of the District, consisting for the most part of plateaux of light siliceous soil, undulating into gleaming sandy ridges, which sometimes present the appearance of low hills. In seasons of favourable rainfall such soil often produces a good autumn crop, but a series of years of heavy rain throws it temporarily out of cultivation. The basins of the rivers are more fertile,

both naturally and because irrigation is easier. In 1903–4 the area under cultivation was 196 square miles, of which 34 were irrigated. Wells supply more than half the irrigated area, tanks or *jhīls* about a quarter, and rivers the remainder.

Bareilly Tahsīl.—Central *tahsīl* of Bareilly District, United Provinces, conterminous with the *pargana* of Karor or Bareilly, lying between 28° 13′ and 28° 37′ N. and 79° 14′ and 79° 38′ E., with an area of 310 square miles. Population increased from 298,482 in 1891 to 325,650 in 1901. There are 414 villages and one town, BAREILLY (population, 131,208), the District and *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,71,000, and for cesses Rs. 48,000. The high density of population, 1,050 persons per square mile, is due to the inclusion of a large city. There is some poor soil, but the tract across which the Rāmgangā flows in a constantly varying channel is generally fertile. Five smaller streams flow from north to south and are used for irrigation. Sugar-cane is the most valuable crop, and is largely grown, while sugar is refined at many places, especially in Bareilly city. In 1903–4 the area under cultivation was 240 square miles, of which 50 were irrigated. Small canals drawn from the East Bahgul river irrigate 6 or 7 square miles, and wells 15 or 20. Tanks or *jhīls* and rivers supply the remainder.

Aonla Tahsīl.—South-western *tahsīl* of Bareilly District, United Provinces, comprising the *parganas* of Aonla, Balliā, Sanehā, and Siraulī (South), and lying between 28° 10′ and 28° 31′ N. and 78° 58′ and 79° 26′ E., with an area of 306 square miles. Population increased from 195,950 in 1891 to 211,836 in 1901. There are 320 villages and three towns, including AONLA (population, 14,383), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,75,000, and for cesses Rs. 46,000. The density of population, 692 persons per square mile, is almost exactly the District average. On the north and east the Rāmgangā flows in a shifting channel, and its tributary, the Aril, crosses the south-west portion. The alluvial tract bordering on the larger river contains good grazing and is very fertile, except where a deposit of sand has been left by floods. A gentle slope leads to the uplands, watered by wells and by the Aril, which is dammed at intervals for the purpose. To the south are found a large *ūsar* plain and a stretch of *dhāk* jungle, and in the north-east the soil is sandy. In 1903–4 the area under cultivation was 240 square miles, of which 56 were irrigated. Rivers and wells each supply about two-fifths of the irrigated area, and tanks or *jhīls* the remainder.

Mīrganj.—West central *tahsīl* of Bareilly District, United Provinces, comprising the *parganas* of Shāhī, Siraulī (North), and Ajaon, and lying between 28° 24′ and 28° 41′ N. and 79° 6′ and 79° 24′ E., with an area of 149 square miles. Population increased from 95,300 in 1891 to 103,198 in 1901. There are 158 villages and one town, Shāhī (population, 3,556). The demand for land revenue in 1903-4 was Rs. 1,50,000, and for cesses Rs. 26,000. The density of population, 640 persons per square mile, is below the District average. The shifting channel of the Rāmgangā winds through the south of the *tahsīl*, and the Dhakrā, Dhorā, and West Bahgul, after flowing from the northern border, unite to form the Dojorā. Mīrganj is a level well-cultivated plain, the greater portion of which is sufficiently moist not to require artificial irrigation. It produces sugar-cane largely, and sugar is refined in many places. In 1903-4 the area under cultivation was 111 square miles, of which 17 were irrigated. Tanks or *jhīls* supply more than half the irrigated area. The new dam across the Kūlī Nadī will supply irrigation to the north of this *tahsīl*.

Baherī.—Northern *tahsīl* of Bareilly District, United Provinces, comprising the *parganas* of Sirsāwān, Kābar, Chaumahla, and Richhā, and lying between 28° 35′ and 28° 54′ N. and 79° 16′ and 79° 41′ E., with an area of 345 square miles. Population fell from 207,063 in 1891 to 193,412 in 1901. There are 410 villages and two small towns, neither of which has a population of 5,000. The demand for land revenue in 1903-4 was Rs. 3,64,000, and for cesses Rs. 61,000. The density of population, 561 persons per square mile, is considerably below the District average. This *tahsīl* was the only one which decreased in population between 1891 and 1901. It is a level plain, intersected by numerous small rivers which have nearly all been dammed to supply an extensive system of canals. It is damp and malarious, especially towards the north, and population is liable to fluctuate considerably with the variations in rainfall. This is the chief rice tract in the District, and sugar-cane is less grown than in the areas farther south. The latter crop is also inferior, and its place is taken by maize in the higher lands. In 1903-4 the area under cultivation was 258 square miles, of which 44 were irrigated, almost entirely from canals.

Nawābganj Tahsīl.—East central *tahsīl* of Bareilly District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 21′ and 28° 39′ N. and 79° 28′ and 79° 47′ E., with an area of 221 square miles. Population

increased from 124,349 in 1891 to 127,160 in 1901. There are 308 villages and three towns, none of which has a population of 5,000. The demand for land revenue in 1903–4 was Rs. 2,51,000, and for cesses Rs. 42,000. The density of population, 575 persons per square mile, is below the District average. The *tahsīl* is a gently sloping plain, intersected by several small rivers from which canals are drawn. It is not so damp as the Baherī *tahsīl* to the north, but the increase in population between 1891 and 1901 was less than in the south of the District. Rice and sugar-cane are largely grown. In 1903–4, 178 square miles were cultivated, of which 55 were irrigated. Canals supply half the irrigated area, and wells most of the remainder.

Aonla Town (*Anwlā*).—Head-quarters of the *tahsīl* of the same name in Bareilly District, United Provinces, situated in 28° 17′ N. and 79° 10′ E., on a branch of the Oudh and Rohilkhand Railway from Alīgarh to Bareilly city, and connected by a metalled road with Budaun. Population (1901), 14,383. The name is probably derived from that of the *ānwlā* tree (*Phyllanthus Emblica*). In the fourteenth and fifteenth centuries the neighbourhood was a thick forest, the lurking-place of the Katehriyās. In the *Ain-i-Akbarī* Aonla is shown as the head-quarters of a *mahāl* or *pargana*. About 1730 Alī Muhammad, the rising leader of the Rohillas, procured the assassination of Dūja Singh, the Katehriyā chief, and shortly afterwards made Aonla his own residence. The town thus became the capital of Rohilkhand; but after Alī Muhammad's death, about 1749, separate residences were allotted to his sons, and Bareilly and Pīlībhīt became more important, as Hāfiz Rahmat Khān, who wielded most of the power, preferred these places. The town thus decayed and sank into insignificance. It is now divided into four separate quarters, which are in fact distinct villages, the intervals between them being filled with shaded graveyards or decaying mosques. A small castle still stands in which the first great Rohilla chief held his court, and his tomb lies in an extensive high-walled enclosure. The chief public buildings are the *tahsīlī* and dispensary, and the American Methodist Mission has a branch here. Aonla is administered under Act XX of 1856, with an income of about Rs. 3,000. There is a considerable local traffic, especially in grain; but it is possible that when Budaun is opened to railway communication trade will decrease. The *tahsīlī* school has about 150 pupils.

Bareilly City (*Barelī*).—Administrative head-quarters of

the Bareilly Division and District, United Provinces, with a cantonment, situated in 28° 22′ N. and 79° 24′ E., 812 miles by rail from Calcutta and 1,031 from Bombay. It lies at the junction of a branch of the Oudh and Rohilkhand Railway from Alīgarh with the main line; and these are met by the narrow-gauge railways from Lucknow through Sītāpur, from Kāthgodām at the foot of the hills, and from Soron through Budaun. Population has increased steadily. The numbers at the four enumerations were as follows: (1872) 102,982, (1881) 113,417, (1891) 121,039, and (1901) 131,208. These figures include the population of cantonments, which numbered 13,828 in 1901. There are 67,000 Hindus, 59,000 Musalmāns, and 3,000 Christians.

Tradition relates that the old city was founded in 1537, and derived its name of Bāns Barelī from Bās, a Barhelā by caste, or from Bās and Barel, Katehriyā Rājputs. The prefix is now usually interpreted as being the word *bāns* or 'bamboo,' and is still used by the inhabitants. About 1573 a subordinate post was established here, to check the turbulent Katehriyās of Rohilkhand, and a small town gradually grew up round the fort. By the close of Akbar's reign, in 1596, Bareilly had become the head-quarters of a *mahāl* or *pargana*. In 1657 it was made the capital of Katehr (see ROHILKHAND), and a new city was founded by Makrand Rai, who was appointed governor. As the Mughal empire decayed in the eighteenth century, the Rohilla power was consolidated by Alī Muhammad, who established his capital at Aonla, and Bareilly was for a time of small importance. Hāfiz Rahmat Khān, who virtually succeeded Alī Muhammad, though nominally guardian to his sons, lived alternately at Pīlībhīt and at Bareilly, which again rose into prominence. The town fell, with the surrounding country, into the possession of the Nawāb of Oudh after the defeat of the Rohillas by the combined British and Oudh forces in 1774, and passed to the British by cession in 1801, when it became the head-quarters of a District and of a provincial court. In 1816 an insurrection took place in consequence of the imposition of a house tax, and in 1837 and 1842 serious religious disturbances occurred between Hindus and Musalmāns.

During the Mutiny of 1857 Bareilly was an important centre of disaffection. The sepoys rose on May 31, and Khān Bahādur Khān, grandson of Hāfiz Rahmat Khān, was proclaimed governor. Most of the Europeans escaped to Nainī Tāl. The rebel ruler found government no easy task, and the

annals of his brief term relate many dissensions and difficulties. As British troops recovered ground to the south and west, the Nawāb of Farrukhābād, the Nāna Sāhib from Cawnpore, Fīroz Shāh from Lucknow, and other leading rebels took refuge in Bareilly. On May 5, 1858, a British army arrived before the city, and two days later the rebels fled into Oudh, and the British occupied Bareilly. In 1871, the peace of the city was again disturbed by serious religious riots, and since then religious differences have occasionally threatened to develop into actual fighting.

Bareilly stands on a plateau slightly elevated above the basin of the Rāmgangā, a branch of which now runs under the city. The native quarter is traversed by a long, well-kept street, widening at intervals into markets. The houses are usually of brick coated with white plaster, which is sometimes adorned with tracery, but few have any pretensions to architectural merit. The oldest building of any importance is the tomb of Hāfiz Rahmat Khān, close to the city on the Aonla road, which is an elegant building of plastered brick with gilded finials. It was built by his son in 1775 and repaired by his daughter in 1839, and was again repaired in 1891–2 at the cost of Government. The finest public buildings are the dispensary and Dufferin Hospitals, the *tahsīlī* and chief police station, and a triangular building containing the municipal hall, a literary institute, and the Honorary Magistrates' courthouse. The Central jail is situated north of the city on the Nainī Tāl road. South of the city lies the civil station, which contains the high school, the American Methodist Orphanage and Theological Seminary, the District offices and District jail, and several churches. The cantonments lie south of the civil station, and contain a small fort built after the disturbance of 1816. The usual garrison consists of British and native infantry, native cavalry, and British artillery. Bareilly is the head-quarters of the Commissioner of the Division, and of the Executive Engineers of the Rohilkhand Canals and Rohilkhand division (Roads and Buildings).

A municipality was constituted in 1858, which in 1901 had a population of 117,380. During the ten years ending 1901 the income and expenditure averaged 1·2 lakhs. In 1903–4 the income was 2·1 lakhs, chiefly from octroi (1·5 lakhs). The expenditure of 2·2 lakhs included public works (Rs. 42,000), conservancy (Rs. 33,000), public safety (Rs. 31,000), and administration and collection (Rs. 19,000). An excellent water-supply is drawn from wells. In the same year the

income of the cantonment fund was Rs. 48,000, and the expenditure Rs. 49,000.

The chief industry of the city is sugar-refining, and about 20,000 tons of raw sugar are imported annually, while 10,000 tons of sugar are exported by rail alone. Bareilly is also noted for its furniture, made both of bamboo and of the ordinary timbers in use for this purpose. Cloth is woven and brass vessels are made; but these industries are not very important. The Rohilkhand and Kumaun Railway workshops employ about eighty hands, and there is a dairy farm in connexion with the lunatic asylum. The principal educational institution is the college, which contains 104 students. A new building for this institution will be erected shortly on a site in the civil station presented by the Nawāb of Rāmpur. The District school has about 450 pupils and the *tahsīlī* school 370. The municipality maintains 21 schools and aids 3 others, with a total attendance in 1904 of 2,321. There are also three orphanages maintained by the Arya Samāj, the American Methodist Mission, and a Muhammadan Association.

Farīdpur Town.—Head-quarters of the *tahsīl* of the same name in Bareilly District, United Provinces, situated in 28° 13′ N. and 79° 33′ E., on the main line of the Oudh and Rohilkhand Railway, and on the road from Lucknow to Delhi. Population (1901), 6,635. The place was formerly called Pura, and was founded by insurgent Katehriyā Rājputs ejected from Bareilly between 1657 and 1679. It derives its present name from one Shaikh Farīd, a mendicant or, according to others, a governor, who built a fort here during Rohilla rule (1748–74). The town contains a *tahsīlī*, a dispensary, and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 1,000. The *tahsīlī* school has 125 pupils, and a girls' school about 20.

Rāmnagar.—Village in the Aonla *tahsīl* of Bareilly District, United Provinces, situated in 28° 22′ N. and 79° 8′ E., 8 miles north of Aonla. The place is celebrated for the ruins in its neighbourhood. A vast mound rises on the north of the village, with a circumference of about 3½ miles, which still bears the name of Ahīchhattra and is identified with the capital of the ancient kingdom of Panchāla and the place visited by Hiuen Tsiang in the seventh century. In one portion of the mound a conical heap of brick towers 68 feet above the plain, crowned by the ruins of a Hindu temple. Large quantities of stone carvings, Buddhist railings, and

ornamental bricks have been found in various parts of these mounds, and a series of coins bearing inscriptions which may be dated approximately in the first or second century B.C. The kings who struck them have been conjecturally identified with the Sunga dynasty mentioned in the Purānas.

[Cunningham, *Archaeological Survey Reports*, vol. i, p. 255; *Coins of Ancient India*, p. 79; V. A. Smith, *Journal, Asiatic Society of Bengal*, 1897, p. 303; *Progress Report, Epigraphical Branch, North-Western Provinces and Oudh*, 1891–2.]

Bijnor District (*Bijnaur*).—Northernmost District in the Bareilly Division, United Provinces, lying between 29° 1′ and 29° 58′ N. and 78° 0′ and 78° 57′ E., with an area of 1,791 square miles. On the north-east the road which passes along the foot of the Himālayas divides Bijnor from Garhwāl District; south-east and south lie Nainī Tāl and Morādābād; while the Ganges flows along the western border between Bijnor and the Districts of Dehra Dūn, Sahāranpur, Muzaffarnagar, and Meerut. The District of Bijnor, an irregular triangle of which the apex points directly northwards, forms the uppermost portion of the Rohilkhand plain, stretching like a wedge between the valley of the Ganges and the hills of Garhwāl. In the north is a system of small elevations, known as the Chāndī hills, which resemble in geological formation the Siwālik range in Dehra Dūn on the western bank of the Ganges. These hills are little more than rugged and barren rocks, except in the valleys and on the lower slopes. They cover an area of about 25 square miles. South of the hills and along the north-east border lies a broad level belt of forest varying from 2 to 10 miles in width, across which flow numerous streams from the hills in the neighbouring District of Garhwāl. Large clearances have been made in places, and cultivation sometimes extends as far as the submontane road. This tract resembles the Bhābar in the adjacent District of Nainī Tāl, but the marshy *tarai* belt found in Nainī Tāl does not occur here. The rest of the District is an open upland plain crossed by river valleys. The largest river is the Ganges, which debouches on the plain near the north of the District, and is there a rapid stream flowing over boulders. Lower down its course is less rapid, its bed widens, and the river becomes navigable from Nāgal. The first considerable affluent of the Ganges is the Mālin, which rises in the Garhwāl hills and flows across the north-west portion of the District. This river is celebrated in Sanskrit literature, and the scene of Kālidāsa's play of *Sakuntalā* is laid near its banks. It has also been identified with the

Boundaries, configuration, and hill and river systems.

Erineses mentioned by Megasthenes. The Khoh rises in the Garhwāl hills, east of the Mālin, and flows almost due south, joining the RĀMGANGĀ near the border of the District. The latter river crosses the Garhwāl border near the eastern corner, and meanders across the eastern portion of the Nagīnā *tahsīl*. Both the Khoh and Rāmgangā are liable to sudden floods, which subside as quickly as they rise. Many smaller streams from the lower hills join these large rivers after a short course.

Geology. Nearly the whole of the District is situated on the Gangetic alluvium, with a *bhābar* zone of coarse gravels along the north-east borders. The Chāndī hills are composed of Upper Tertiary rocks, all in a rapid state of decay by weathering. These rocks comprise, towards the plains, a gentle normal anticlinal arch in middle Siwālik soft sand rock, which is very micaceous. North-east lies the southern limit of a synclinal trough in upper Siwālik conglomerates[1].

Botany. The forests of Bijnor will be described later. The rest of the District presents no peculiarities in its flora. Fine groves of mango trees are found in every part. The river valleys as well as the forest glades produce grasses which are used for thatching, for basket-work, for matting, and for making rope and twine. The wild hemp (*Cannabis sativa*) grows abundantly; the leaves are collected and, when dry, are known as *bhang*, which is used for preparing a refreshing drink.

Fauna. Tigers and leopards were formerly common in the forests, together with *chītal* (*Cervus axis*) and *sāmbar* (*Cervus unicolor*). The deer have, however, been almost exterminated, and the carnivora have consequently retired farther into the hills. A tiger occasionally strays down, and leopards are still met with in ravine tracts. Antelope are common, and a few hog deer and wild hog survive along the Rāmgangā and Ganges. Four-horned deer and barking-deer are occasionally met with in the forests. There are some hyenas, and the lynx is not unknown. Wild elephants come down from the hills during the rains. The chief game-birds are duck, snipe, peafowl, black partridge, jungle-fowl, quail, and sand-grouse.

Climate and rainfall. Its proximity to the Himālayas renders the climate of Bijnor cool and pleasant, while the abundance of drainage channels prevents the District from being as unhealthy as

[1] R. D. Oldham, 'Geology of Part of the Gangasulan Pargana,' *Records, Geological Survey of India*, vol. xvii, pt. iv; and C. S. Middlemiss, 'Physical Geology of the Sub-Himālaya of Garhwāl and Kumaun,' *Memoirs, Geological Survey of India*, vol. xxiv, pt. ii.

other tracts near the foot of the mountains. The annual rainfall averages 44 inches, varying from 38 near the Ganges to 47 in the north of the District. Between 1864 and 1898 the variations from the average did not exceed 25 per cent. in twenty-seven years, while in four years the fall was in excess, and there were four years of considerable deficit.

History. Legend ascribes the foundation of Bijnor town to the mythical king Ben or Vena, who is familiar in tradition from the Punjab to Bihār. In the seventh century Hiuen Tsiang visited a kingdom the capital of which has been identified with MANDĀWAR. The early history of Muhammadan rule is obscure, but raids by the Mongols are referred to. In 1399 Tīmūr visited the District, and committed his usual atrocities, massacring a large number of the inhabitants, and fighting several pitched battles. Thence he marched to Hardwār, returning to the Doāb. No more is heard of Bijnor till the time of Akbar, when it formed part of the *sarkār* of Sambhal in the *Sūbah* of Delhi. During the most prosperous age of the Delhi empire, the District shared in the general freedom from historical incidents, though in 1566 and again in 1587 peace was disturbed by ambitious *jāgīrdārs* or by rebels fleeing from other parts of India. As the power of the Mughals relaxed, the Rohilla Pathāns began to assert independence, under Alī Muhammad. Although this chieftain had managed to annex the rest of ROHILKHAND by 1740, his first acquisitions in Bijnor seem to have been made in 1748, after his return from exile, while his friend, Dunde Khān, occupied another tract about the same time. The remainder of the District was rapidly acquired, and before his death in 1749 Alī Muhammad made a grant of the northern portion to Najīb Khān, who was to become a great leader. In the forests on the border of the District lies a strong fort, called Lāl Dhāng, which often proved a safe refuge in the struggles between the Rohillas and the Nawābs of Oudh. Here in 1752, after a trying siege, the Rohillas gave a bond to the Marāthās, as the price of release, which was afterwards made the excuse for further invasions. Najīb Khān married Dunde Khān's daughter, and gradually extending his influence west of the Ganges, and at Delhi, obtained the title of Najīb-ud-daula and in 1757 became paymaster of the imperial army. His success laid him open to the attacks of jealous rivals; and the infamous Wazīr Ghāzī-ud-dīn called in the Marāthās, who besieged Najīb-ud-daula in the fort of Shukartār on the west bank of the Ganges, but retreated on the approach of

the Rohillas. After the battle of Pānīpat, where Najīb-ud-daula distinguished himself, he became Wazīr, and filled the highest post in the kingdom, with credit to himself and benefit to the state. After his death in 1770 his son, Zābita Khān, was defeated by the Marāthās, who now ravaged Rohilkhand; and a few years later, in 1774, the Rohilla power east of the Ganges was crushed, and the final treaty by which the territory was incorporated in Oudh was concluded at Lāl Dhāng. The District was ceded to the British by the Nawāb of Oudh in 1801; and four years later Amīr Khān, the Pindāri, rode through it like a whirlwind, recalling the raid of Tīmūr 400 years before. The District then remained quiet until the Mutiny of 1857.

News of the Meerut outbreak reached Bijnor on May 13. The Roorkee sappers mutinied and arrived at Bijnor on the 19th, but they passed on without creating any disturbance, and the District remained quiet till June 1. On that date the Nawāb of Najībābād, a grandson of Zābita Khān, appeared at Bijnor with 200 armed Pathāns. On the 8th, after the outbreak at Bareilly and Morādābād, the European officers quitted Bijnor, and reached Roorkee on the 11th. The Nawāb at once proclaimed himself as ruler, and remained in power till August 6, when the Hindus of the District rose against the Musalmān authority and defeated him for the time. On the 24th the Muhammadans returned in force and drove out the Hindus. The latter attacked their conquerors again on September 18, but without success, and the Nawāb ruled unopposed until April 17, 1858. Our troops then crossed the Ganges, and utterly defeated the rebels at Nagīna on the 21st. British authority was immediately re-established, and has not since been disturbed.

Archaeology. The forests in the north of the District contain many ancient ruins and mounds which have not been fully explored; but Buddhist remains have been unearthed in places. At NAJĪBĀBĀD, the tomb of Najīb Khān, the founder of the town, and a few remains of other buildings are the chief memorials of Muhammadan rule.

The people. The District contains 16 towns and 2,132 villages. The village sites still preserve the old compact appearance, which was the result of the unsettled times when men built their houses close together for protection, and there are few outlying hamlets. Population fluctuates considerably. The numbers at the four enumerations were as follows: (1872) 737,153, (1881) 721,450, (1891) 794,070, and (1901) 779,951. The variations largely

depend on the rainfall, excessive rain causing land to fall out of cultivation. There are four *tahsīls*—BIJNOR, NAJĪBĀBĀD, NAGĪNA, and DHĀMPUR—the head-quarters of each being at a place of the same name. The chief towns are the municipalities of NAGĪNA, NAJĪBĀBĀD, BIJNOR (the District head-quarters), CHĀNDPUR, and DHĀMPUR. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Bijnor	483	6	572	203,972	422	+ 2.0	5,248
Najībābād	396	2	422	153,896	389	− 1.9	3,558
Nagīna	453	2	464	156,898	346	− 14.3	2,816
Dhāmpur	459	6	674	265,185	578	+ 4.4	4,837
District total	1,791	16	2,132	779,951	435	− 1.8	16,459

Hindus form 64 per cent. of the total, Musalmāns 35 per cent., and there are 5,730 Aryas, a larger number than in any District in the Provinces except Bulandshahr. The density of population is almost the same as the Provincial average. Between 1891 and 1901 the District suffered both from excessive rain and from drought. Almost the whole population speak Western Hindī, the prevailing dialect being Hindustāni.

Castes and occupations.

Chamārs (leather-dressers and cultivators), 118,000, are the most numerous of the Hindu castes, forming nearly 25 per cent. of the total Hindu population. Rājputs number 72,000, but 61,000 of these are so-called Chauhāns, who intermarry among themselves and therefore are not true Rājputs. Jāts (agriculturists), 55,000; Tagās (agriculturists), 8,000; and Sainīs (cultivators), 20,000, are chiefly found in the west of the United Provinces. Brāhmans number only 26,000. A caste peculiar to the District is that of the Ramaiyās or pedlars (2,200). Among Muhammadans are Shaikhs, 59,000; Julāhās (weavers) 57,000; and Telis (oil-pressers), 15,000. The Jhojhās (6,000) are not found east of Bijnor. Agriculture supports only 47 per cent. of the population, while personal services support 8 per cent., general labour 8 per cent., and cotton-weaving 6 per cent. Chauhāns, Baniās, Jāts, Tagās, and Shaikhs are the largest holders of land; and Jāts, Chauhāns, Shaikhs, Rawās, and Sainīs are the chief cultivators.

Christian missions.

Out of 1,853 native Christians in 1901, 1,824 were Methodists. The American Methodist Mission has laboured here since 1859, and has several branches in the District.

General agricultural conditions.

Most of Bijnor is included in the uplands, which are divided into three portions. The western tract, near the Ganges, consists of low sandy ridges, the space between which is occupied by a fair loam; but facilities for irrigation are not good. East of this tract the central portion of the District forms the low-lying valley of the Bān, Gāngan, and Karula rivers. This is decidedly more fertile, and opportunities for irrigation are better than in the western tract. Another elevated watershed farther east, which divides the central portion from the Khoh and Rāmgangā rivers, is sandy but more fertile than the western tract. East of the Rāmgangā lies an area the soil of which is moist and fertile, but the deadly climate makes cultivation fluctuate. As in most Districts where Jāts are found, equal care is devoted to all good land, instead of the lands near village sites receiving most of the manure available.

Chief agricultural statistics and principal crops.

The tenures are those usually found in the United Provinces. There are 4,348 *zamīndāri mahāls*, thirty-five *pattīdāri*, and 369 *bhaiyāchārā*, the local term for the last being *lānādāri*. The main agricultural statistics for 1903-4 are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Bijnor . . .	483	328	8	53
Najībābād . . .	396	188	7	66
Nagīna . . .	453	197	14	148
Dhāmpur . . .	459	320	39	51
Total	1,791	1,033	68	318

The chief food-crops, with their areas in square miles in 1903-4, are: rice (221), wheat (276), barley (115), *bājra* (120), and gram (98). Sugar-cane is the most important of the other crops, covering 105 square miles. Cotton and oilseeds are also largely grown.

Improvements in agricultural practice.

Cultivation has not extended within the last forty years; but the area sown with the more valuable crops—such as rice, sugar-cane, and wheat—has increased, the area double cropped is rising, and a better variety of wheat has been introduced. Loans under the Land Improvement and Agriculturists' Loans Acts are not taken to any large extent, amounting to only Rs. 77,000 between 1890 and 1903, of which Rs. 40,000 was advanced in the famine year 1896-7.

Cattle, horses, and sheep.

The ordinary breed of cattle is inferior; but the forests provide ample grazing for cattle from other Districts. An attempt has been made to improve the breed of horses, and two Government stallions are kept. Mule-breeding has become popular, and several donkey stallions are maintained. The sheep are of the ordinary inferior type.

Irrigation.

Bijnor is remarkable for the small extent of its irrigation by artificial means. In 1903-4 canals supplied 26 square miles, wells 33, and other sources 9. The canals are small works, those drawn from the Khoh and Gāngan rivers being maintained by Government; while a third canal, drawn from the Mālin, is a private enterprise. Some of the rivers are used directly for irrigation, especially in years of drought. Masonry wells are practically never used for irrigation; and water is generally obtained, where required, from shallow temporary wells, from which it is raised in a pot by a lever.

Forests.

Three portions of the forest land in the District are 'reserved' under the Forest Act. The Chāndī forest of 60 square miles, which includes the hills in the north of the District, some islands in the Ganges, and part of the plains, is part of the Ganges division of the Western Circle. In the northern half *sāl* (*Shorea robusta*) is well established; but the southern portions are more open. The forest supplies bamboos and other minor products to Hardwār, and the revenue varies from Rs. 10,000 to Rs. 20,000. The Rehar forest is situated in the south-east of the District and belongs to the Garhwāl Forest division. Its area is 26 square miles; and *sāl* and other timber, fuel, and grass are supplied to inhabitants of the neighbourhood, the revenue varying from Rs. 2,000 to Rs. 7,000. The Amsot and Mohanwālī Reserves, managed by the Collector, include an area of 8 square miles.

Minerals.

Kankar or nodular limestone is extremely rare, and is generally imported from Morādābād. Lime is made from the limestone found in the Chāndī hills.

Arts and manufactures.

The chief industry of the District is the manufacture of raw and refined sugar, which are largely exported. Coarse cotton cloth is woven in many parts, and in a few towns a finer material is produced. There are small local industries at several places, such as the manufacture of Brāhmanical threads (*janeo*) at Bijnor, papier mâché at Mandāwar, carved ebony, glassware, and ropes at Nagīna, and ironwork at Dhāmpur.

Commerce.

Sugar and forest produce are the chief exports, while gram and other grain, salt, piece-goods, and metals are imported. The grain and salt come chiefly from the Punjab. The trade

of Western Kumaun largely passes through the District from Kotdwāra at the foot of the hills. The chief commercial centres are the towns of Seohārā, Dhāmpur, Nagīna, and Najībābād on the railway. Before the railway was opened, sugar was exported by road to Meerut or Muzaffarnagar; but the railway now takes about four-fifths of the total exports.

Railways and roads. The main line of the Oudh and Rohilkhand Railway passes through the centre of the District, with a branch from Najībābād to Kotdwāra at the foot of the Himālayas in Garhwāl District. A line from Gajraula on the Morādābād-Ghāziābād Railway to Chāndpur in the south of the District has been surveyed. Communications are very defective. Only 39 miles of road are metalled, while 553 miles are unmetalled. The whole of the former and 17 miles of the latter are maintained by the Public Works department; but the cost of repairs is met almost entirely from Local funds. The metalled roads radiate from Bijnor town to the railway at Nagīna, and to the Ganges on the Meerut and Muzaffarnagar roads. The tracts most in need of improved roads are the northern Ganges *khādar* and the area north-east of the railway. Avenues of trees are maintained on 95 miles.

Famine. Bijnor has suffered comparatively little from drought. The natural moistness of the soil and the rarity of a complete failure of the rains, due to the proximity of the hills, combine to save a crop in most years, while the profits from sugar-cane have been fairly constant. The dependence for food-grains on other tracts is the most serious factor in prolonged drought. In 1803-4 famine was severely felt; but Bijnor escaped distress in later years till 1837-8, when Rs. 91,000 of the revenue demand was remitted. Famine attacked the District in 1860-1, when Rs. 32,000 was spent on relief, and in 1868-9 the expenditure was 1.8 lakhs. In 1878 the number on relief works rose to over 22,000. Bijnor again escaped lightly in 1896-7, when relief works were opened but did not attract considerable numbers.

District staff. The Collector is assisted by a member of the Indian Civil Service (when available), and by two Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each of the four *tahsīls*.

Civil justice and crime. There are two regular District Munsifs, and village Munsifs have recently been appointed. The District is included in the Civil and Sessions Judgeship of Morādābād, criminal work being usually disposed of by the Additional Judge. Crime is not heavy, and Bijnor is not remarkable for any special offences. Female infanticide was formerly suspected in the case of the Jāts,

and in 1904 as many as 1,884 persons were still registered and under surveillance.

Land revenue administration.

Bijnor, when acquired by cession in 1801, formed the northern subdivision of the new District of Morādābād. In 1817 it was constituted a separate charge with head-quarters at Nagīna, and in 1824 Bijnor became the capital. The early settlements were for short periods, and were based on rough statements of area and probable out-turn and on a consideration of previous collections. Up to 1822 the system of administration was one of farming; but in that year proprietary rights were first recognized. A rough survey was commenced about 1827, and the first regular settlement on modern principles was made under Regulation IX of 1833 between 1834 and 1839. It was preceded by a regular survey and was carried out in the usual method, by ascertaining standard rent and revenue rates. The revenue fixed was 11·2 lakhs, which, though very uneven, was much more moderate than earlier settlements. Another revision took place between 1863 and 1874, when a revenue of 11·8 lakhs was assessed. The last resettlement of the District was made between 1893 and 1898, but four *parganas* were settled in 1901–2. The revenue then fixed amounted to 14·5 lakhs, or about 46 per cent. of the net 'assets.' The incidence is a little more than R. 1 an acre, varying from about 5 annas to slightly more than Rs. 2. Assessments of revenue in Bijnor have always been difficult, owing to the prevalence of grain rents. Cash rents are always taken on account of sugar-cane and cotton, but the produce of other crops is divided equally between the landlord and the tenant. Another custom exists by which for a short period, usually three to five years, the owner of a village agrees with the whole cultivating community to receive from them a lump sum in place of the cash rents and a share of produce. The latest revision of settlement was largely based on rent rates derived from these leases. The soil was classified, and rates paid for different classes were ascertained.

Collections on account of land revenue and total revenue have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	12,29	11,93	16,07	14,21
Total revenue . .	13,87	16,57	21,59	19,77

Local self-government.

There are five municipalities—NAGĪNA, NAJĪBĀBĀD, BIJNOR, CHĀNDPUR, and DHĀMPUR—and eight towns are administered under Act XX of 1856. Beyond the limits of these, local

affairs are managed by the District board, which has an income and expenditure of about a lakh. In 1903-4 roads and buildings cost Rs. 69,000.

Police and jails.

The District contains 20 police stations; and the Superintendent of police commands a force of 4 inspectors, 75 subordinate officers, and 308 constables, besides 210 municipal and town police, and 1,827 rural and road police. The District jail contained a daily average of 256 prisoners in 1903.

Education.

Few Districts in the United Provinces are so backward in regard to literacy as Bijnor. In 1901 only 2 per cent. (3·9 males and 0·2 females) could read and write. The number of public schools increased from 128 with 3,991 pupils in 1880-1 to 204 with 8,588 pupils in 1900-1. In 1903-4 there were 209 with 9,307 pupils, including 537 girls, besides 250 private schools with 3,768 pupils. Three of the schools are managed by Government and 107 by the District and municipal boards. Out of a total expenditure on education of Rs. 46,000, Local funds contributed Rs. 35,000 and fees Rs. 9,000. An attempt has been made by the Arya Samāj to revive the old Hindu system of education, and a *gurūkul* has been founded at Kāngrī in the north of the District.

Hospitals and dispensaries.

There are 10 hospitals and dispensaries, with accommodation for 88 in-patients. The number of cases treated in 1903 was 89,000, of whom 1,500 were in-patients, and 400 operations were performed. The total expenditure was Rs. 15,000, most of which was met from Local funds.

Vaccination.

About 26,800 persons were successfully vaccinated in 1903-4, representing a proportion of 34 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[*District Gazetteer* (1879, under revision); F. J. Pert, *Settlement Report* (1899).]

Bijnor Tahsīl.—Western *tahsīl* of Bijnor District, United Provinces, comprising the *parganas* of Bijnor, Dārānagar, Mandāwar, Chāndpur, and Bāshta, and lying between 29° 1′ and 29° 38′ N. and 78° 0′ and 78° 25′ E., with an area of 483 square miles. Population increased from 200,039 in 1891 to 203,972 in 1901. There are 572 villages and six towns, the largest of which are BIJNOR (population, 17,583), the District and *tahsīl* head-quarters, CHĀNDPUR (12,586), MANDĀWAR (7,210), JHĀLŪ (6,444), and HALDAUR (5,628). The demand for land revenue in 1903-4 was Rs. 3,96,000, and for cesses Rs. 64,000. The density of population, 422 persons

per square mile, is slightly below the District average. The *tahsīl* is bounded on the west by the Ganges, and the Mālin crosses its northern portion. Near the Ganges is a rich alluvial tract, from which a gentle ascent leads to the sandy uplands. In 1903–4 the area under cultivation was 328 square miles, of which only 8 were irrigated.

Najībābād Tahsīl.—Northern *tahsīl* of Bijnor District, United Provinces, comprising the *parganas* of Najībābād, Kīratpur, and Akbarābād, and lying between 29° 25′ and 29° 58′ N. and 78° 7′ and 78° 31′ E., with an area of 396 square miles. Population fell from 156,873 in 1891 to 153,896 in 1901. There are 422 villages and two towns: NAJĪBĀBĀD (population, 19,568), the *tahsīl* head-quarters, and KĪRATPUR (15,051). The demand for land revenue in 1903–4 was Rs. 2,75,000, and for cesses 45,000. The density of population, 389 persons per square mile, is much below the District average. The *tahsīl* contains a considerable area of forest, besides a hilly tract which is uninhabited. The northern portion is scored with torrents, which are dry for eight months in the year but scour deep ravines during the rains. Numerous other streams cross the rich alluvial plain which constitutes the rest of the *tahsīl*, the chief being the Mālin. The Ganges forms the western boundary. In 1903–4 the area under cultivation was 188 square miles, of which only 7 were irrigated. A small private canal from the Mālin serves about one square mile, but rivers are the chief source of supply.

Nagīna Tahsīl.—North-eastern *tahsīl* of Bijnor District, United Provinces, comprising the *parganas* of Nagīna, Barhāpura, and Afzalgarh, and lying between 29° 13′ and 29° 43′ N. and 78° 17′ and 78° 57′ E., with an area of 453 square miles. Population fell from 183,147 in 1891 to 156,898 in 1901. There are 464 villages and two towns: NAGĪNA (population, 21,412), the *tahsīl* head-quarters, and AFZALGARH (6,474). The demand for land revenue in 1903–4 was Rs. 2,76,000, and for cesses Rs. 49,000. The density of population, 346 persons per square mile, is the lowest in the District. The *tahsīl* contains a considerable area of forest. It is crossed by several small streams, and also by the Rāmgangā and its tributary the Khoh. The soil is rich, and irrigation is provided in the Nagīna *pargana* by small canals from the Khoh and Gāngan; but the climate is not healthy, and the considerable decrease of population between 1891 and 1901 is chiefly due to the unfavourable seasons ending with the excessive rain of 1894. Cultivation also suffers from the depredations of wild animals.

In 1903-4 the area under cultivation was 197 square miles, of which 14 were irrigated. Canals supply the greater part of the irrigated area.

Dhāmpur Tahsīl.—South-eastern *tahsīl* of Bijnor District, United Provinces, comprising the *parganas* of Dhāmpur, Seohārā, Nihtaur, and Būrhpur, and lying between 29° 2′ and 29° 25′ N. and 78° 19′ and 78° 41′ E., with an area of 459 square miles. Population increased from 254,011 in 1891 to 265,185 in 1901. There are 674 villages and 6 towns: SHERKOT (population, 14,999), NIHTAUR (11,740), SEOHĀRĀ (10,062), DHĀMPUR (7,027), SAHASPUR (5,851), and TĀJPUR (5,015). The demand for land revenue in 1903-4 was Rs. 1,74,000, and for cesses Rs. 82,000. The density of population, 578 persons per square mile, is the highest in the District. Several rivers cross the *tahsīl* from north to south, the chief being the Gāngan, the Khoh, and the Rāmgangā. Dhāmpur lies in the central depression of the District and is fertile; but parts of it are liable to flooding, and sandy tracts are found in the east. In 1903-4 the area under cultivation was 320 square miles, of which 39 were irrigated. Wells supply about half the irrigated area, and small canals from the Gāngan and Khoh about a third.

Afzalgarh.—Town in the Nagīna *tahsīl* of Bijnor District, United Provinces, situated in 29° 24′ N. and 78° 41′ E., 34 miles east of Bijnor town. Population (1901), 6,474. The place was founded by one Afzal Khān about the middle of the eighteenth century. It lies low, and is very unhealthy owing to the dampness of the neighbourhood. The fort built by Afzal Khān was dismantled after the rebellion of 1857. The town is administered under Act XX of 1856, with an income of about Rs. 1,100. Excellent cotton cloth is made here by Julāhās (Muhammadan weavers). There is a primary school with 100 pupils.

Bijnor Town (*Bijnaur*).—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 29° 22′ N. and 78° 8′ E., on a metalled road 19 miles from Nagīna station on the Oudh and Rohilkhand Railway. Population (1901), 17,583, of whom 9,429 were Musalmāns. According to tradition, the town was founded by the mythical Rājā Ben or Vena. Its early history is, however, a blank until the time of Akbar, when Bijnor gave its name to a *mahāl* or *pargana*. In the seventeenth century it was the head-quarters of the Jāts, who struggled long with the Musalmāns of the place. It became the head-quarters of the District

in 1824, and was occupied in the Mutiny by the rebel Nawāb of Najībābād. The town stands on undulating ground 3 miles east of the Ganges, and is well paved and drained. Besides the District offices it contains male and female dispensaries, the District jail, and the local head-quarters of the American Methodist Mission. Bijnor has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 11,000. In 1903–4 the income was Rs. 17,000, chiefly from octroi (Rs. 12,000); and the expenditure was Rs. 16,000. There is some trade in sugar, and the pocket-knives and Brāhmanical threads (*janeo*) made here enjoy more than a local reputation. The District school has 155 pupils, a middle school 282, a girls' school 48, and eight aided schools 300 boys and 30 girls.

Chāndpur.—Town in the District and *tahsīl* of Bijnor, United Provinces, situated in 29° 8′ N. and 78° 16′ E., 21 miles south of Bijnor town. A line from Chāndpur to Gajraula on the Morādābād-Ghāziābād branch of the Oudh and Rohilkhand Railway has been surveyed. Population (1901), 12,586. Chāndpur was the chief town of a *mahāl* or *pargana* under Akbar, but nothing more is known of its history. It was occupied by the Pindāris in 1805, and by Musalmān rebels in 1857. Up to 1894 it was the head-quarters of a separate *tahsīl*. The town is well paved and drained, and presents a thriving appearance. It contains a dispensary and police station, and has been a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 7,000. In 1903–4 the income was Rs. 11,000, chiefly from octroi (Rs. 8,000); and the expenditure was Rs. 11,000. The principal manufactures are pipe-bowls and water-bottles of earthenware, and coarse cotton cloth. A middle school has 200 pupils and 12 smaller schools about 530.

Dhāmpur Town.—Head-quarters of the *tahsīl* of the same name in Bijnor District, United Provinces, situated in 29° 18′ N. and 78° 31′ E., on the main line of the Oudh and Rohilkhand Railway. Population (1901), 7,027. The first historical event connected with the town is the defeat of the imperial forces here by Dunde Khān, the Rohilla, about 1750. Dhāmpur was sacked by the Pindāris under Amīr Khān in 1805, and an attempt was made to plunder the treasury during the Mutiny in 1857. The town is well built and thriving, and contains the *tahsīlī*, a private dispensary, and a branch of the American Methodist Mission. Dhāmpur has been a municipality since 1866. During the ten years ending 1901 the

income and expenditure averaged Rs. 7,000. In 1903–4 the income was Rs. 10,000, chiefly from octroi (Rs. 6,000); and the expenditure was also Rs. 10,000. There is a considerable trade in iron and brassware; and locks, brass candlesticks, carriage ornaments, gongs, and badges are largely made. The *tahsīlī* school has 160 pupils, and the municipality manages two schools and aids seven others with 574 pupils.

Haldaur.—Town in the District and *tahsīl* of Bijnor, United Provinces, situated in 29° 17′ N. and 78° 16′ E., 12 miles south-east of Bijnor town. Population (1901), 5,628. The place is said to have been founded by one Halda Singh, the reputed ancestor of the Chauhāns, to whom it now belongs. The head of the family suffered for his loyalty in 1857, and was rewarded with the title of Rājā. Haldaur contains a post office and a handsome house, the residence of the Chauhān proprietor. A *panchāyat* of sugar-refiners is held annually, which settles the price to be paid to cultivators for raw sugar, and the rate so fixed is accepted as a standard over the whole District. The primary school has 40 pupils, and two aided schools have 94 pupils.

Jhālū.—Town in the District and *tahsīl* of Bijnor, United Provinces, situated in 29° 20′ N. and 78° 14′ E., 6 miles south-east of Bijnor town. Population (1901), 6,444. Under Akbar it was the head-quarters of a *mahāl* or *pargana*. It is administered under Act XX of 1856, with an income of about Rs. 1,000. It contains a primary school with 113 pupils, and three aided schools with 62 boys and 35 girls.

Kīratpur.—Town in the Najībābād *tahsīl* of Bijnor District, United Provinces, situated in 29° 30′ N. and 78° 13′ E., 10 miles north of Bijnor town. Population (1901), 15,051. There are two divisions of the town, Kīratpur Khās and Basī. The former was founded in the fifteenth century during the reign of Bahlol Lodī, and the latter in the eighteenth century by Pathāns, who built a fort. The walls are still standing near the gateway, and within is a handsome mosque. Kīratpur is administered under Act XX of 1856, with an income of about Rs. 3,600. Trade is insignificant, but lacquered chairs and boxes are made. The District board school has 112 pupils, and six aided schools 216 pupils. The American Methodist Mission has a branch here.

Mandāwar.—Town in the District and *tahsīl* of Bijnor, United Provinces, situated in 29° 29′ N. and 78° 8′ E., 8 miles north of Bijnor town. Population (1901), 7,210. It was identified by St. Martin and by General Cunningham with the Motī-

pura visited by Hiuen Tsiang in the seventh century; but this identification rests entirely on its distance from various places, and no excavations have been made[1]. According to tradition, some Agarwāl Baniās settled here in the twelfth century, when they found the place deserted. The town was captured by Tīmūr in 1399, and was the capital of a *mahāl* or *pargana* under Akbar. In 1805 it was pillaged by Amīr Khān, the Pindāri, and during the Mutiny it suffered at the hands of Jāt marauders. A mound half a mile square rises some 10 feet above the rest of the town, containing large bricks. The Jāma Masjid stands on this, constructed from the materials of a Hindu temple. North-east of the town is another large mound, and there are two tanks in the neighbourhood. Mandāwar is administered under Act XX of 1856, with an income of about Rs. 1,200. There is a small industry in papier mâché; and boxes, pen-trays, paper-knives, &c., are made. A primary school has 126 pupils, and two aided schools have 85 pupils. The American Methodist Mission has a branch here.

Nagīna Town.—Head-quarters of the *tahsīl* of the same name in Bijnor District, United Provinces, situated in 29° 27′ N. and 78° 26′ E., on the Oudh and Rohilkhand Railway, and at the terminus of a metalled road from Bijnor. Population (1901), 21,412, of whom 14,887 were Musalmāns. The early history of the town is unknown, but it is mentioned in the *Ain-i-Akbarī* as head-quarters of a *mahāl* or *pargana*. During the rise of the Rohilla power in the middle of the eighteenth century a fort was built here. In 1805 the place was sacked by the Pindāris under Amīr Khān, and from 1817 to 1824 it was the head-quarters of the newly-formed District called Northern Morādābād. During the Mutiny the town was the scene of several conflicts between rival parties, as well as of the final defeat of the rebels on April 21, 1858, which crushed the revolt in Bijnor. Nagīna is a large and busy place, with good brick houses and paved streets, which drain into a tributary of the Khoh on the east and into the Karula on the west. It contains the old fort, now used as a *tahsīlī*, a dispensary, a *tahsīlī* school, and a branch of the American Methodist Mission. Nagīna has been a municipality since 1886. During the ten years ending 1901 the income and expenditure averaged Rs. 12,000. In 1903-4 the income was Rs. 18,000, chiefly from octroi (Rs. 15,000); and the expenditure was Rs. 18,000. A market is held twice a week, when there is a considerable trade in sugar, rice, and cotton. Nagīna is celebrated for the

[1] *Archaeological Survey Reports*, vol. i, p. 248.

excellent workmanship of its carved ebony wares, such as walking-sticks, trays, boxes, &c., which are frequently inlaid with ivory. Large quantities of small glass phials are blown here, and exported to Hardwār for the pilgrims who carry away Ganges water in them. In former days matchlocks were largely made, and some ironwork is still produced. Hempen sacking and ropes and lacquered goods are also made. The *tahsīlī* school has 192 pupils, and the municipality aids 12 primary schools attended by 513 pupils.

Najībābād Town.—Head-quarters of the *tahsīl* of the same name in Bijnor District, United Provinces, situated in 29° 37′ N. and 78° 21′ E., at the junction of the main line of the Oudh and Rohilkhand Railway with the branch to Kotdwāra in Garhwāl. Population (1901), 19,568. Najībābād was founded by Najīb-ud-daula, paymaster and for a time Wazīr of the Mughal empire, who built a fort at Patthargarh, a mile to the east, in 1755. In 1772 the town was sacked by the Marāthās, and in 1774 it passed into the hands of the Nawāb of Oudh. During the Mutiny Mahmūd, great-grandson of Najīb-ud-daula, revolted, and in 1858, when the place was recovered, the palace was destroyed. Najībābād is close to the forest and its climate is unhealthy, but the town is well drained into the Mālin. The principal relic of Pathān rule is the tomb of Najīb-ud-daula; and a fine carved gateway still marks the site of the palace, now occupied by the *tahsīlī*. A spacious building called the Mubārak Bunyād, which was built at the close of the eighteenth century, is used as a resthouse. The fortress of Patthargarh, also known as Najafgarh, is in ruins. The stone used in its construction was taken from an ancient fort, called Mordhaj, some distance away. Najībābād contains a dispensary and police station, and a branch of the American Methodist Mission. It has been administered as a municipality since 1866. During the ten years ending 1901 the income and expenditure averaged Rs. 15,000. In 1903-4 the income was Rs. 25,000, chiefly from octroi (Rs. 20,000); and the expenditure was Rs. 28,000. Najībābād is of considerable importance as a dépôt for trade with the hills. Metal vessels, cloth, blankets, shoes, &c., are made here, and exported to Garhwāl, while there is a through trade in salt, sugar, grain, and timber. The town is also celebrated for its production of sweetmeats and small baskets, and in former days its matchlocks were well-known. The *tahsīlī* school has over 220 pupils and an English school about 100. A primary school and 11 aided schools have about 350 pupils.

Nihtaur.—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 20′ N. and 78° 24′ E., 16 miles east of Bijnor town. Population (1901), 11,740. The town has a mean appearance, most of the houses being built of mud; but there is a handsome old mosque, to which three modern domes have been added. A few years ago a seditious organization was discovered here. It was known as the *Bāra Topī*, or 'twelve hats,' and resembled the Sicilian secret societies. Nihtaur is administered under Act XX of 1856, with an income of about Rs. 3,300. There is a little trade in dyeing, but the chief industry is sugar-refining. A middle school has 160 pupils, and two aided schools are attended by 52 boys and 40 girls.

Sahaspur.—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 7′ N. and 78° 37′ E., on the Oudh and Rohilkhand Railway. Population (1901), 5,851. It was the head-quarters of a *mahāl* or *pargana* in Akbar's time. The town is extremely dirty; and though most of its inhabitants are Musalmāns, it swarms with pigs. There is a fine *sarai* used by Hindu pilgrims on their way to Hardwār. The only industry is the weaving of cotton cloth of good quality. A primary school has 50 pupils.

Seohārā (*Siuhārā*).—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 13′ N. and 78° 35′ E., on the main line of the Oudh and Rohilkhand Railway. Population (1901), 10,062. The town contains a police station and a handsome mosque, and also a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 3,000. Its trade is of some importance. A primary school has 63 and five aided schools have 182 pupils.

Sherkot.—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 20′ N. and 78° 35′ E., 28 miles east of Bijnor town. Population (1901), 14,999. Sherkot was founded during the reign of Sher Shāh, and under Akbar it was the chief town of a *mahāl* or *pargana*. In 1805 it was sacked by Amīr Khān, the Pindāri, and in the Mutiny of 1857 it became the scene of struggles between loyal Hindus and rebel Musalmāns. Up to 1844 it was the head-quarters of the *tahsīl*, and a dispensary is maintained here. Sherkot is administered under Act XX of 1856, with an income of about Rs. 4,000. There is a considerable trade in sugar, and embroidered rugs are made. A middle school has 135 pupils, and three aided schools are attended by 42 boys and 65 girls.

Tājpur.—Town in the Dhāmpur *tahsīl* of Bijnor District, United Provinces, situated in 29° 10′ N. and 78° 29′ E., 27 miles south-east of Bijnor town. Population (1901), 5,015. The town is chiefly noted as the residence of the leading Tagā family in the District, some members of which have embraced Christianity. The Tājpur estate was acquired in the eighteenth century, and further extended in the nineteenth for services rendered to the newly established British administration. In 1857 the *zamīndār* or *chaudhrī* of Tājpur remained loyal, and was rewarded by the title of Rājā and by remissions of revenue. The present Rājā lives in a fine house built after the European fashion, and is a member of the Provincial Legislative Council. Tājpur contains a dispensary maintained by the Rājā, a primary school with 79 pupils, and an aided girls' school with 32 pupils.

Boundaries, configuration, and river system.

Budaun District (*Badāyūn*).—South-western District of the Bareilly Division, United Provinces, lying between 27° 40′ and 28° 29′ N. and 78° 16′ and 79° 31′ E., with an area of 1,987 square miles. It is bounded on the north by Morādābād; on the north-east by the State of Rāmpur and Bareilly District; on the south-east by Shāhjahānpur; and on the south-west by the Ganges, which divides it from the Districts of Bulandshahr, Alīgarh, Etah, and Farrukhābād. The greater part consists of a level plain crossed by numerous rivers, and much of it requires little irrigation when the rainfall is normal. A high ridge of sand, rarely more than 4 or 5 miles broad, running through the District from north-west to south-east, once formed the old high bank of the Ganges. Between this and the present course of the river is a low tract of country, traversed by a chain of swamps or *jhīls*, and by the river Mahāwa. The fertile plain north-east of the sandy ridge is watered by the Sot or Yār-i-Wafādār, a river which enters the Bisaulī *tahsīl* from Morādābād and flows diagonally across the District, piercing the sandy tract. Although the Mahāwa flows in a deep channel, it is liable to sudden floods, which do much damage, and it receives spill-water from the Ganges. The Sot is fringed by ravines and seldom inundates its banks. In the north-east the RĀMGANGĀ forms the boundary for about 36 miles, and is joined by the Aril.

Geology.

The District consists entirely of Gangetic alluvium, varying from pure sand to stiff clay. *Kankar* or calcareous limestone is found in places.

Botany.

The District is well wooded, and the whole of the rich upland tract is studded with beautiful mango groves. In the north of the Ganges *khādar* there is thick *dhāk* jungle (*Butea*

frondosa); and the north-east corner still contains part of the celebrated *dhāk* jungle which formerly sheltered the Katehriyā Rājputs in their frequent contests with the Musalmān rulers of Delhi. On the sandy ridge vegetation is scanty, and thatching grass and *kāns* (*Saccharum spontaneum*) spring up where cultivation is neglected.

A tiger was killed in 1893 near the Ganges, but this is an extremely rare event. Antelope, wild hog, and *nīlgai* are common, and wolves cause more damage to human life than in any other District of the United Provinces. Black partridge, quail, water-fowl, and sand-grouse abound, and florican are occasionally met with. **Fauna.**

The climate of Budaun resembles that of other Districts in Rohilkhand, being somewhat cooler and moister than the adjacent portions of the Doāb, owing to the neighbourhood of the hills. The average monthly temperature varies from 53° to 60° in January to 88° and 93° in May and June. **Climate and temperature.**

The annual rainfall over the whole District averages 34 inches, varying from more than 36 in the east to 31 in the west. Fluctuations in the amount are large; in 1883 only 17 inches fell, and in 1874 as much as 56 inches. **Rainfall.**

Budaun owes its name, according to tradition, to one Buddh, an Ahar prince, who founded the city at the beginning of the tenth century. When the forces of Islām were beginning to spread eastwards into India, it was held, as recorded in an inscription found at Budaun, by the Rāthor, Lakhana Pāla, eleventh in descent from Chandra, the founder of the dynasty[1]. The half-legendary hero, Saiyid Sālār, is said to have stayed for a time in Budaun; but authentic history commences with the victory of Kutb-ud-dīn Aibak in 1196, who slew the Rājā and sacked the city. Shams-ud-dīn Altamsh obtained the government of the new dependency, which he exchanged in 1210 for the throne of Delhi. Under his successors, Budaun ranked as a place of great importance; and in 1236 it gave a second emperor to Delhi in the person of Rukn-ud-dīn, whose handsome mosque, the Jāma Masjid Shamsī, still adorns the city of which he had been governor. During the thirteenth and fourteenth centuries the annals of Budaun are confined to the usual local insurrections and bloody repressions which form the staple of Indian history before the advent of the Mughals. In 1415 Mahābat Khān, the governor, rose in rebellion, and the emperor, Khizr Khān, marched against him in vain. After a reign of eleven years' duration, the **History.**

[1] *Epigraphia Indica*, vol. i, p. 63.

rebellious vassal was compelled in 1426 to surrender to Mubārak Shāh, Khizr Khān's successor. Alam Shāh, the last of the Saiyids, retired to the city in 1450; and during his stay his Wazīr joined with Bahlol Lodī in depriving him of all his dominions, except Budaun, which he was permitted to retain until his death in 1479. His son-in-law, Husain Shāh of Jaunpur, then took possession of the District; but Bahlol Lodī soon compelled the intruder to restore it to the Delhi empire. After the establishment of the Mughal power, Humāyūn appointed governors of Sambhal and Budaun; but they disagreed, and the Sambhal governor, having taken Budaun by siege, put his rival to death. Under the administrative organization of Akbar, Budaun was formed in 1556 into a *sarkār* of the *Sūbah* of Delhi, which was granted as a fief to Kāsim Alī Khān. In Shāh Jahān's time the seat of government was removed to Bareilly. The rise of the Rohilla power, which centred in the latter town, accelerated the decline of Budaun. In 1719, during the reign of Muhammad Shāh, Muhammad Khān Bangash annexed the south-eastern portion of the District, including the city, to Farrukhābād, while the Rohillas, under Alī Muhammad, subsequently seized upon the remainder. In 1754, however, the Rohillas recovered the *parganas* which had been united to Farrukhābād. Budaun fell, with the rest of Rohilkhand, into the power of the Nawāb of Oudh in 1774, and was ceded to the British with other territory in 1801. Shortly afterwards a revolt took place, which was speedily repressed, and the Mutiny of 1857 alone disturbs the peaceful course of civil administration.

News of the outbreak at Meerut reached Budaun on May 15. A fortnight later the treasury guard mutinied, plundered the treasury, and broke open the jail. The civil officers then found themselves compelled to leave for Fatehgarh. On June 2 the Bareilly mutineers marched in, and on the 17th Abdur Rahīm Khān assumed the government. As usual, disturbances broke out between the Hindus and the Musalmān leaders; and in July and August the Muhammadans fought two regular battles with the Rājputs, whom they completely defeated. At the end of August several European fugitives crossed the Ganges into the District and were protected at Dātāganj by the landholders. After the fall of Walīdād Khān's fort at Mālāgarh in Bulandshahr, that rebel chieftain passed into Budaun in October, but found it advisable to proceed to Fatehgarh. On November 5 the Musalmāns defeated the Ahars at Gunnaur, and took possession of that *tahsīl*,

hitherto held by the police. Towards the close of January, 1858, the rebels, under Niyāz Muhammad, marched against Fatehgarh, but were met by Sir Hope Grant's force at Shamsābād and dispersed. Niyāz Muhammad then returned to Budaun. On April 27 General Penny's force defeated the rebels at Kakrālā, though the general himself was killed in the action; while Major Gordon fell upon them in the north, near Bisaulī. Their leaders fled to Bareilly, and managers were at once appointed to the various *parganas* on behalf of the British Government. By May 12 Budaun came once more into our hands, though Tāntiā Topī, with his fugitive army, afterwards crossed this portion of Rohilkhand into Oudh on the 27th. Brigadier Coke's column entered the District on June 3, and Colonel Wilkinson's column from Bareilly on the 8th. Order was then permanently restored.

Archaeology.

The principal archaeological remains are at BUDAUN, where a series of tombs, mosques, and other religious buildings remain to mark the former importance of the place.

The people.

The District contains 11 towns and 1,087 villages. Owing to unfavourable seasons the population fell considerably between 1872 and 1881, but has risen since. The numbers at the four enumerations were as follows: (1872) 934,670, (1881) 906,541, (1891) 925,982, and (1901) 1,025,753. There are five *tahsīls*—GUNNAUR, BISAULĪ, SAHASWĀN, BUDAUN, and DĀTĀGANJ—the head-quarters of each being at a place of the same name. The principal towns are the municipalities of BUDAUN, SAHASWĀN, UJHĀNĪ, and the 'notified area' of BILSĪ. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Gunnaur . .	370	1	313	162,291	439	+ 28.3	1,671
Bisaulī . .	360	3	350	211,507	588	+ 15.1	2,538
Sahaswān . .	454	2	382	193,628	426	+ 0.3	2,813
Budaun . .	385	2	377	243,141	632	+ 7.3	6,938
Dātāganj . .	418	3	385	215,186	515	+ 9.7	2,824
District total	1,987	11	1,807	10,25,753	516	+ 10.8	16,784

Hindus form 83 per cent. of the total and Musalmāns 16 per cent. There are 6,116 Christians, chiefly natives. Between 1891 and 1901 the District was prosperous owing to favourable

agricultural conditions, and the increase in population was remarkably large. Almost the whole population speak Western Hindī, the principal dialect being Braj.

Castes and occupations.

Ahars are the most numerous Hindu caste, numbering 144,000, or about 16 per cent. of the total. They are a hardy, independent caste, allied to the Ahīrs, living by agriculture, and are only found in Rohilkhand and a few adjoining Districts. The other important Hindu castes are Chamārs (leather-dressers and cultivators), 134,000; Muraos (cultivators), 86,000; Rājputs, 62,000; Brāhmans, 61,000; and Kahārs (servants and cultivators), 47,000. The chief Muhammadan tribes are Pathāns, 29,000; Shaikhs, 23,000; and Julāhās (weavers), 20,000. Agriculture supports more than 67 per cent. of the population, personal services support 5 per cent., general labour 5 per cent., and cotton-weaving 3 per cent. Rājputs, Shaikhs, and Ahars are the principal holders of land; Muraos and the few Jāts in the District are the best cultivators.

Christian missions.

The American Methodist Mission opened work in Budaun in 1859, and has recently been very successful in making converts. Of the 6,080 native Christians in the District in 1901, 5,972 were Methodists.

General agricultural conditions.

The fertile plain which includes most of the District is called Katehr and is well cultivated. With good rains it does not need irrigation, but if necessary temporary wells can be dug at small cost. Wheat and *jowār* are here the principal crops, and sugar-cane and rice are grown to some extent. South-west of this lies the sandy ridge of *bhūr*, which is rendered infertile by excessive rain, and in which wells cannot be made. After cultivation in favourable seasons for two or three years a fallow of five to ten years is required. The *bhūr* chiefly produces barley and *bājra*. The Ganges *khādar* is generally liable to inundations and to injury from wild animals. Wheat is grown where possible, and fine crops of barley and peas are obtained in good years. Rice is grown largely in the north-east near the Rāmgangā, and in the south-east near the Sot.

Chief agricultural statistics and principal crops.

The ordinary tenures of the United Provinces are found, 2,984 *mahāls* being held *zamīndāri*, 1,355 *pattīdāri*, and 69 *bhaiyāchārā*. Large estates are few in number. The main agricultural statistics for 1903-4 are shown in the table on the next page, in square miles.

The chief food-crops are wheat and *bājra*, which covered 583 and 373 square miles respectively, or 37 and 24 per cent. of the net area cropped. Barley, *jowār*, maize, gram, and rice each cover from 9 to 6 per cent. The area under cotton

is decreasing, but still amounts to about 26 square miles; sugar-cane covers 23, and poppy 59. Indigo cultivation is almost extinct.

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Gunnaur . . .	370	246	40	70
Bisaulī . . .	360	322	69	10
Sahaswān . . .	454	338	54	48
Budaun . . .	385	341	65	49
Dātāganj . . .	418	311	64	62
Total	1,987	1,558	292	239

The great feature of the agriculture of the District is the increase in the area double cropped, which rose in thirty years from 2 per cent. of the total to 21 per cent. In the *khādar* maize is growing in popularity, as it rises above floods before the other autumn crops, and sugar-cane is also being more largely planted. The area under wheat and barley is increasing. Advances under the Land Improvement and Agriculturists' Loans Acts are rarely taken except in unfavourable seasons. Out of 1·3 lakhs advanced from 1890 to 1904 nearly Rs. 72,000 was lent in the famine years 1896–7. Improvements in agricultural practice.

Stud bulls were at one time stationed in the District; but none is kept now, and the ordinary breed of cattle is inferior. Horse-breeding is popular, and six stallions are maintained by Government. Sheep and goats are of the ordinary poor type, and the best animals are imported from Rājputāna. Cattle, horses, sheep, and goats.

Wells are the chief source of irrigation, and in 1903–4 supplied 194 square miles, while tanks or *jhīls* supplied 64 and rivers 27. Masonry wells are used for this purpose only in the north of the District, where the spring-level is low. Elsewhere temporary wells are made, lasting for a single harvest. A system of private canals, irrigating about 1,000 acres of rice, has been made in the south-east of the District, where the Sot cuts through the *bhūr* and enters the *khādar*, and another rough system exists on the Aril. The Mahāwa is not used for irrigation, but the Sot supplies a small area in dry years. Irrigation.

Kankar or nodular limestone is the chief mineral product. Lime is occasionally made from this, but more commonly from a kind of calcareous marl. Minerals.

The chief manufacturing industry is that of sugar-refining. Indigo was formerly made largely, but very little is prepared now. Cotton-weaving, carpentry, brasswork, and pottery are Arts and manufactures.

of the ordinary type; a little papier mâché work is turned out at Budaun town.

Commerce. Owing to the poorness of communications, the District has been left behind in the general growth of trade. BILSĪ, once the second largest mart for grain in this part of Rohilkhand, is now of small account; and SAHASWĀN, another centre in the days before railways changed the direction of commerce, has no trade at all. Agricultural produce, chiefly grain and sugar, is exported with difficulty. The imports include cloth, salt, and metals. A large fair is held annually at KĀKORĀ, which is attended by 150,000 people.

Railways and roads. The branch of the Oudh and Rohilkhand Railway from Bareilly and Alīgarh cuts through two portions of the north of the District. A narrow-gauge line from Bareilly through Budaun, opened in 1906, crosses the Ganges and joins the Cawnpore-Achhnerā Railway at Soron in Etah District.

A good deal has been done in recent years to improve the roads in the District, which contains 120 miles of metalled and 445 miles of unmetalled roads. The former are maintained by the Public Works department; but the cost of all but 33 miles is met from Local funds. There are avenues of trees on 126 miles. The chief roads are that leading from Bareilly to Hāthras and Muttra, which passes through Budaun town, and a road from Budaun to Aonla railway station. Feeder roads to other stations have been made and internal communications improved; but the south and east of the District are still backward.

Famine. A native historian records a famine in 1761, during which large numbers of people died and many emigrated. In 1803–4, soon after the commencement of British rule, the harvest failed and many farmers absconded. In the great famine of 1837–8 Budaun suffered the extreme of misery: thousands died of starvation, grain rose to unattainable prices, and the police found themselves powerless to preserve order. The scarcity of 1860–1 was less serious; but relief works were opened and remissions made, and similar measures were required in 1868–9. In 1877 a deficiency in the rainfall caused some distress, but timely rain in October gave relief. The famine of 1896–7 did not affect Budaun appreciably.

District staff. The Collector is usually assisted by a member of the Indian Civil Service (when available), and by four Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the headquarters of each *tahsīl*, and an officer of the Opium department at Budaun town.

Civil justice and crime.

There are four regular Munsifs, and the District is included in the Civil Judgeship of Shāhjahānpur and in the Sessions Judgeship of Morādābād. Sessions cases are tried by the Additional Judge of the latter District. Budaun holds a bad reputation for violent crimes and for dacoity. Female infanticide was formerly strongly suspected, and entailed the maintenance of a special police; but in 1904 only 1,141 names remained on the register of persons proclaimed under the Act.

Land revenue administration.

The area now forming Budaun was, at the cession in 1801, included in Morādābād. Various changes were made, and in 1823 a District of Sahaswān was formed, which also comprised parts of the present Districts of Etah and Alīgarh. By 1845 the District had assumed its present shape. The early settlements were for short periods, and were based on the previous demand or on a system of competition. Rights in land were very lightly prized and were freely transferred. Operations under the improved system, laid down by Regulation VII of 1822, commenced with estates which were being directly managed by the Collector owing to the resignation of proprietors or the failure to find purchasers at sales. The first regular settlement under Regulation IX of 1833 was made between 1834 and 1838. It was preceded by a survey, and rights were completely recorded. The land was valued as the basis of the assessment and a demand of 9 lakhs was fixed. The next revision took place between 1864 and 1870, on the usual lines. Soils were classified and the rent paid for each class of land carefully ascertained. A rate, usually in excess of this, was assumed as the basis of assessment, and applied village by village, with modifications where necessary. The revenue was raised from 9·3 to 10·3 lakhs, and the new assessment was subsequently found to have been very light. The latest revision was carried out between 1893 and 1898. In this the assessment was made on the recorded rentals, which were found to be, on the whole, reliable. Land was again classified into circles according to the quality of its soil, and rates for each class were ascertained by analysis of the rents actually paid for different kinds of holdings. These rates were used in checking and correcting the recorded rent-rolls. In assessing, the revenue was fixed at less than half the accepted 'assets' in cases where there was reason to believe that these could not be collected over a series of years. The new revenue is 13·2 lakhs, representing 46·3 per cent. of the 'assets.' The incidence is a little more than R. 1 an

acre, varying from 11 annas to about Rs. 1·6. Receipts from land revenue and from all sources have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	10,36	10,37	12,78	13,29
Total revenue . .	12,05	14,91	18,74	19,39

Local self-government. There are three municipalities—BUDAUN, SAHASWĀN, and UJHĀNĪ—besides one 'notified area,' BILSĪ, and seven towns administered under Act XX of 1856. Outside of these, local affairs are managed by the District board, which had an income and expenditure of 1·2 lakhs in 1903-4. Roads and buildings cost Rs. 55,000 in that year.

Police and jails. Budaun contains 18 police stations; and the District Superintendent of police commands a force of 3 inspectors, 97 subordinate officers, and 360 constables, besides 98 municipal and town police and 2,045 rural and road police. The District jail contained a daily average of 317 prisoners in 1903.

Education. This is the most backward District in the United Provinces as regards the literacy of its population, of whom only 1·6 (2·8 males and 0·2 females) could read and write in 1901. The number of public institutions rose from 160 with 4,686 pupils in 1880-1, to 171 with 7,002 pupils in 1900-1. In 1903-4 there were 168 public schools with 7,909 pupils, of whom 802 were girls, and also 211 private schools with 2,199 pupils. Two of the public schools were managed by Government, and 165 by the District and municipal boards. The total expenditure on education was Rs. 43,000, of which Rs. 35,000 was provided by Local funds and Rs. 8,000 from fees.

Hospitals and dispensaries. There are 10 hospitals and dispensaries, with accommodation for 113 in-patients. In 1903 the number of cases treated was 108,000, of whom 1,500 were in-patients, and 3,500 operations were performed. The expenditure was Rs. 19,000, chiefly met from Local funds.

Vaccination. About 34,000 persons were successfully vaccinated in 1903-4, representing a proportion of 33 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[*District Gazetteer* (1879, under revision); J. S. Meston, *Settlement Report* (1901).]

Gunnaur Tahsīl.—North-western *tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Asadpur and Rājpura, and lying between 28° 6′ and 28° 29′ N. and 78° 16′

and 78° 39′ E., with an area of 370 square miles. Population increased from 126,440 in 1891 to 162,291 in 1901. There are 313 villages and one town, GUNNAUR (population, 6,644), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,16,000, and for cesses Rs. 26,000. The density of population, 439 persons per square mile, is below the District average, though the rate of increase between 1891 and 1901 was higher than in any other *tahsīl*. Gunnaur lies almost entirely in the Ganges *khādar*, the high sandy tract characteristic of Budaun only crossing the south-east corner. It is thus liable to floods, but benefits by comparatively dry seasons. A considerable tract is still occupied by jungle. In 1903–4 the area under cultivation was 246 square miles, of which 40 were irrigated, wells being the chief source of supply.

Bisaulī Tahsīl.—North-eastern *tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Bisaul, Islāmnagar, and Satāsī, and lying between 28° 8′ and 28° 28′ N. and 78° 32′ and 79° 8′ E., with an area of 360 square miles. Population increased from 183,716 in 1891 to 211,507 in 1901. There are 350 villages and three towns, the largest being ISLĀMNAGAR (population, 6,367) and BISAULĪ (5,323), the head-quarters. The demand for land revenue in 1903–4 was Rs. 3,18,000, and for cesses Rs. 38,000. The density of population, 588 persons per square mile, is considerably above the District average. Bisaulī is one of the most prosperous *tahsīls* in Budaun. It lies almost entirely in the fertile Katehr tract, and is watered by the Sot and Aril rivers. There are also numerous small lakes or *jhīls*. In 1903–4 the area under cultivation was 322 square miles, of which 69 were irrigated, mostly from wells.

Sahaswān Tahsīl.—*Tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Sahaswān and Kot, and lying between 27° 57′ and 28° 20′ N. and 78° 30′ and 79° 4′ E., with an area of 454 square miles. Population increased very slightly, from 193,070 in 1891 to 193,628 in 1901. There are 328 villages and two towns: SAHASWĀN (population, 18,004), the *tahsīl* head-quarters, and BILSĪ (6,035). The demand for land revenue in 1903–4 was Rs. 2,33,000, and for cesses Rs. 29,000. The density of population, 426 persons per square mile, is the lowest in the District. The *tahsīl* contains a fertile stretch of rich upland soil watered by the Sot river, in the tract known as Katehr; but this is mostly held by impoverished and quarrelsome Rājputs, and it also suffers from defective drainage. South of the Katehr a large area

is occupied by a sandy ridge, 4 or 5 miles wide, and poor in quality; and beneath this the *khādar* stretches away to the Ganges, which forms the south-western boundary. The *khādar* is crossed by the Mahāwa, which is gradually scouring out a larger bed, and in years of heavy rainfall brings down disastrous floods, increased by the spill-water from the Ganges. Portions of the *khādar* are extremely fertile, but the tract is liable to great vicissitudes. In 1903–4 the area under cultivation was 338 square miles, of which 54 were irrigated, mostly from wells.

Budaun Tahsīl.—Head-quarters *tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Budaun and Ujhānī, and lying between 27° 50′ and 28° 12′ N. and 78° 48′ and 79° 19′ E., with an area of 385 square miles. Population increased from 226,673 in 1891 to 243,141 in 1901. There are 377 villages and two towns: BUDAUN (population, 39,031), the District and *tahsīl* head-quarters, and UJHĀNĪ (7,917). The demand for land revenue in 1903–4 was Rs. 2,78,000, and for cesses Rs. 39,000. The density of population, 632 persons per square mile, is the highest in the District. A large portion of the *tahsīl* is situated in the fertile Katehr tract, and is watered by the Sot. In the north-east this slopes to the valley of the Aril, and still contains portions of the famous forest which once surrounded Aonla in Bareilly District. South-west of the Katehr lies a high ridge of sandy land, 3 or 4 miles wide, from which a stretch of precarious alluvial *khādar* reaches to the Ganges on the south-west border. In 1903–4 the area under cultivation was 341 square miles, of which 65 were irrigated. Wells supply two-thirds of the irrigated area.

Dātāganj.—Easternmost *tahsīl* of Budaun District, United Provinces, comprising the *parganas* of Salempur and Usehat, and lying between 27° 40′ and 28° 11′ N. and 79° 6′ and 79° 31′ E., with an area of 418 square miles. Population increased from 196,083 in 1891 to 215,186 in 1901. There are 385 villages and three towns, the largest being ALĀPUR (population, 6,327) and KAKRĀLĀ (5,954). The demand for land revenue in 1903–4 was Rs. 2,85,000, and for cesses Rs. 35,000. The density of population, 515 persons per square mile, is almost the same as the District average. The *tahsīl* is bounded by the Ganges on the south, and by the Rāmgangā on the east. The northern portion is crossed by the Aril, a tributary of the latter, and by many small channels, while the Sot traverses the southern portion. The natural moisture and the character of the soil are peculiarly favour-

able to the growth of rice, which this *tahsīl* produces largely. A considerable area in the south is watered by a system of private canals taken from the Sot, of some antiquity. As a whole the upland area is inferior to the rich Katehr tract found in other *tahsīls* of this District, while the areas bordering on the Rāmgangā and Ganges are liable to disastrous floods. In 1903–4 the area under cultivation was 311 square miles, of which 64 were irrigated. Wells supply half the irrigated area, and tanks or *jhīls* and rivers the remainder in about equal proportions.

Alāpur.—Town in the Dātāganj *tahsīl* of Budaun District, United Provinces, situated in 27° 55′ N. and 79° 15′ E., 12 miles south-east of Budaun town. Population (1901), 6,327. The town is said to have been founded by the emperor Alā-ud-dīn Alam Shāh after his abdication in 1450. The only building of any interest is the mosque built during the time of Aurangzeb, which, however, contains a fragment of an older inscription dated 1307. Alāpur is administered under Act XX of 1856, with an income of about Rs. 900. A market, held twice a week, is of some local importance. The middle school has 86 pupils.

Bilsī.—Town in the Sahaswān *tahsīl* of Budaun District, United Provinces, situated in 28° 8′ N. and 78° 55′ E., 16 miles west of Budaun town. Population (1901), 6,035. The town was founded towards the close of the eighteenth century, and owes its name to one Bilāsī Singh. In the first half of the nineteenth century the new road system gave great advantages to Bilsī, which became the second trading centre in the neighbourhood. The railway, however, passed Bilsī at a distance of 20 miles and it has lost its trade, while its prosperity has further decreased owing to the decline in indigo, which was largely manufactured here. From 1884 to 1904 Bilsī was administered as a municipality, with an income and expenditure of about Rs. 3,000. In 1904 it was reduced to the position of a 'notified area.' It contains a primary school with 94 pupils and a small girls' school, besides a dispensary and a branch of the American Methodist Mission.

Bisaulī Town.—Head-quarters of the *tahsīl* of the same name in Budaun District, United Provinces, situated in 28° 18′ N. and 78° 57′ E., 23 miles north-east of Budaun town. Population (1901), 5,323. The town first became of importance under Dunde Khān, lieutenant of Alī Muhammad and Hāfiz Rahmat Khān, the celebrated Rohilla chiefs, who built a fort here about 1750. After the fall of the Rohilla power Bisaulī

declined. Near the town is Dunde Khān's tomb, which stands on a commanding spot overlooking the broad valley of the Sot. Bisaulī contains a *tahsīlī*, a *munsifī*, a dispensary, and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 1,400. The trade of the place is purely local. The *tahsīlī* school has 117 pupils, and there is a small girls' school.

Budaun Town (*Badāyūn*).—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 2′ N. and 79° 7′ E., on a branch of the Rohilkhand and Kumaun Railway from Bareilly to Soron, and on the road from Bareilly to Muttra. Population (1901), 39,031, of whom 21,995 were Musalmāns and 16,033 Hindus. According to tradition, the town was founded by a mythical Rājā Buddh, an Ahar by caste, about A. D. 905, or by a descendant of his named Ajayapāla. An inscription, dating probably from the early part of the twelfth century, records the founding of a temple and mentions a list of eleven Rāthor kings reigning at Budaun, which is called Vodāmayūtā[1]. Legend relates that the town was taken by Saiyid Sālār in 1028; but the first historical event is its capture by Kutb-ud-dīn in 1196, when the last Hindu king was slain. Budaun then became an important post on the northern boundary of the Delhi empire, and its governors were chosen from distinguished soldiers who had constantly to face revolts by the turbulent Katehriyā Rājputs. Two of its governors in the thirteenth century, Shams-ud-dīn Altamsh and his son Rukn-ud-dīn Fīroz, passed from Budaun to the throne at Delhi. In the fifteenth century Mahābat Khān, the governor, imitated the example of the Jaunpur ruler and became independent for a time. About 1450 Alā-ud-dīn, the last of the Saiyid kings of Delhi, after abdicating the throne, retired to Budaun, where he lived for twenty-eight years. In 1571 the town was destroyed by fire; and in the reign of Shāh Jahān, nearly a century later, the governor of the *sarkār* was transferred to Bareilly, and the importance of Budaun declined. For a time it was included in the State formed early in the eighteenth century by the Nawāb of Farrukhābād; but it then passed to the Rohillas. In 1838 it became the head-quarters of a British District. On the outbreak of the Mutiny in May, 1857, the treasury guard at Budaun rose, and being joined by the townspeople broke open the jail, and burned the civil station. A native government was then established and remained in power till General Penny's victory at Kakrālā

[1] *Epigraphia Indica*, vol. i, p. 63.

in the following April, when the rebel governor fled the city, and order was again re-established.

Budaun stands about a mile east of the river Sot, and consists of two parts, the old and new town. In the former are the remains of the old fort, with massive ramparts once so wide that four carriages could be driven abreast. The Jāma Masjid, built in 1223 by Shams-ud-dīn Altamsh, largely from the materials of the temple referred to above, is an immense building 276 feet long by 216 broad, with a central dome restored in Akbar's time. It stands high and is an imposing feature in the landscape for many miles. Numerous smaller mosques and *dargāhs* remain as memorials of the palmy days of Pathān and Mughal rule[1]. In the neighbourhood are graveyards filled with mouldering tombs, chief among which may be mentioned that of Sultān Alā-ud-dīn and his wife. Budaun is also famous as having been the birthplace of the historian Badāyūnī, the rival of Abul Fazl. The chief modern public buildings are the District courts, the jail, a commodious dispensary, two large *sarais*, and a small leper asylum; and a park is now being laid out. Budaun is a centre for the work of the American Methodist Mission in the District. The municipality was constituted in 1884. During the ten years ending 1900–1 the income averaged Rs. 35,500 and the expenditure Rs. 34,500. In 1903–4 the income was Rs. 57,000, including Rs. 32,000 from octroi and Rs. 15,000 from rents; and the expenditure was Rs. 56,000. The municipality has Rs. 10,000 invested. Budaun is not now a great trade centre; but its former proximity to the railway, as compared with Bilsī, has given it some advantages which may increase now that a line actually passes through it. The grain market, called Carmichaelganj after a former Collector, belongs to the municipality. Papier mâché pen-boxes made here have some reputation. The District school has 160 pupils, a mission school 120, and the *tahsīlī* school 270. The municipality manages 10 schools and aids 16 others attended by more than 1,000 pupils.

Gunnaur Town.—Head-quarters of the *tahsīl* of the same name in Budaun District, United Provinces, situated in 28° 14′ N. and 78° 27′ E., 4 miles south of the Babrālā station of the Oudh and Rohilkhand Railway. Population (1901), 6,644. The town was the head-quarters of a *mahāl* or *pargana* under Akbar, but its early history is legendary. It is chiefly composed of mud huts with a few brick houses, and contains a dispensary and a branch of the American

[1] *Journal, Asiatic Society of Bengal*, vol. xli.

Methodist Mission. Gunnaur is administered under Act XX of 1856, with an income of about Rs. 1,000. A good deal of trade passes through the place to Babrālā station. There are a middle school with 90 pupils and a girls' school with 15.

Islāmnagar.—Town in the Bisaulī *tahsīl* of Budaun District, United Provinces, situated in 28° 20′ N. and 78° 44′ E., 6 miles south-east of the Bahjoī station on the Oudh and Rohilkhand Railway. Population (1901), 6,367. During the Mutiny, in May, 1858, there was a skirmish near this place between a body of rebels and the troops of the loyal Nawāb of Rāmpur, the latter being victorious. The town is administered under Act XX of 1856, with an income of about Rs. 1,500. It is the chief market in the neighbourhood for agricultural produce, and there is a large export of raw sugar. It contains a dispensary and a middle school with 112 pupils.

Kākorā.—Village in the District and *tahsīl* of Budaun, United Provinces, situated in 27° 53′ N. and 79° 3′ E., near the bank of the Ganges, 12 miles south-west of Budaun town. Population (1901), 2,941. The place is noted for a religious and trading fair held at the full moon of Kārtik (October–November), which is attended by as many as 100,000 to 200,000 persons, who come from all parts of Rohilkhand, as well as from Delhi, Muttra, and Cawnpore. The principal object is bathing, but a good deal of trade is carried on in cloth, metal goods, leather, and cattle. The actual site of the fair varies within a few miles according to the movements of the river.

Kakrālā.—Town in the Dātāganj *tahsīl* of Budaun District, United Provinces, situated in 27° 53′ N. and 79° 12′ E., 12 miles south of Budaun town. Population (1901), 5,954. The name is said to have been derived from *kankar* or nodular limestone, which is largely found in the neighbourhood. In April, 1858, General Penny defeated near Kakrālā a party of Ghāzīs or fanatical Musalmāns, who were lying in ambush for him. This victory put an end to the rebel government which had ruled at Budaun for eleven months. The town contains a *sarai*, and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 1,000. The primary school has 75 pupils.

Sahaswān Town.—Head-quarters of the *tahsīl* of the same name in Budaun District, United Provinces, situated in 28° 4′ N. and 78° 45′ E., near the left bank of the Mahāwa, 24 miles west of Budaun town by metalled road. Population (1901), 18,004. According to tradition, the town was founded

by Sahasra Bāhu, a king of SANKĪSĀ in Farrukhābād District, who built a fort now represented by an earthen mound. The *Ain-i-Akbarī* records this place as the chief town of a *mahāl* or *pargana*. In 1824 Sahaswān became the head-quarters of a British District, which were removed to Budaun owing to the unhealthiness of the site. The town is really a collection of scattered villages, standing at the point where the sandy ridge of the District meets the Ganges *khādar*. It contains a *tahsīlī*, a *munsifī*, and a dispensary. A municipality was constituted in 1872. During the ten years ending 1901 the income and expenditure averaged Rs. 8,000. In 1903-4 the income was Rs. 14,000, chiefly from a tax on circumstances and property (Rs. 6,000); and the expenditure was Rs. 13,000. The town has little commercial importance; but perfumes are manufactured, especially from the *keora* or screw pine which grows in the neighbourhood. The middle school has 160 pupils, and the municipality manages six schools and aids three others with a total attendance of 390.

Ujhānī.—Town in the District and *tahsīl* of Budaun, United Provinces, situated in 28° 1′ N. and 79° 1′ E., on the Rohilkhand and Kumaun Railway, 8 miles west of Budaun town. Population (1901), 7,915. According to tradition, it was originally called Pipariā, from the number of *pīpal* trees here, and the name was changed by Mahipāl of Ujjain. Under the Rohillas it became the residence of Abdullah Khān, second son of Alī Muhammad, who died here of snake-bite. Shortly after British rule commenced, a revolt was raised at Ujhānī over the collection of revenue. The town, though chiefly built of mud, has a flourishing appearance, and the main streets are paved. The mosque and unfinished tomb of Abdullah Khān are the principal buildings. The American Methodist Mission has a branch here. Ujhānī has been a municipality since 1884. During the ten years ending 1901 the income and expenditure averaged Rs. 5,000. In 1903-4 the income was Rs. 7,000, of which Rs. 3,000 came from a tax on circumstances and property; and the expenditure was Rs. 7,000. There is a small export trade in *ghī*, sugar, and grain; and sugar-refining is the chief industry. Indigo was formerly manufactured largely, but the trade has declined. The municipality manages two schools and aids two others, attended by 328 pupils.

Morādābād District.—District in the Bareilly Division, United Provinces, lying between 28° 20′ and 29° 16′ N. and 78° 4′ and 79° 0′ E., with an area of 2,285 square miles. On

Boundaries, configuration, and river system.

the north it is bounded by Bijnor and Nainī Tāl; on the east by the State of Rāmpur; on the south by Budaun; and on the west the Ganges divides it from the Districts of Meerut and Bulandshahr. Near the Ganges lies a stretch of low *khādar* land, from which rises a high sandy ridge. The central portion of the District comprises a fertile level plain, chiefly drained by the Sot or Yār-i-Wafādār river, into which many smaller channels flow. This plain sinks gradually into the broad valley of the RĀMGANGĀ, which crosses the north-east corner of the District, cutting off a portion which borders on the Tarai and presents the usual characteristics of the sub-Himālayan tracts; many small streams rising for the most part in the Tarai flow through it. There are a few ponds in the District, but none of considerable size.

Geology. Morādābād consists almost entirely of alluvium, in which boulders of stone are occasionally found. *Kankar* or calcareous limestone is obtained in all parts south-west of the valley of the Rāmgangā. The saline efflorescence called *reh* is found in the southern part of the Ganges *khādar*.

Botany. The sandy tracts in the west are extremely bare, and produce nothing spontaneously except long thatching-grass. In the richer tract near the centre trees are more common, especially near the older towns, which are shaded by fine mango groves. On the whole the District is not well wooded.

Fauna. Tigers are occasionally shot in the jungles in the north-east of the District or in the Ganges *khādar*, and leopards are more common. Hog deer and wild hog are numerous in the same tracts, and *nīlgai* are found in small numbers. The wolf, fox, badger, otter, weasel, porcupine, and monkey are found more or less throughout the District. The commoner game-birds include quail, sand-grouse, grey and black partridge, wild duck of many varieties, snipe, wild goose, &c. Fish of many kinds are found in the rivers, and form an important element in the food-supply of the people.

Climate and temperature. The climate of Morādābād is generally healthy, except in the submontane tract which borders on the Tarai, and in the lowlands of the Ganges and Sot. The temperature is cooler than in Districts west of the Ganges and farther from the Himālayas, and frost is common in the winter. The annual mean is about 75°, the minimum monthly temperature 56° in January, and the maximum 90° to 92° in May or June.

Rainfall. The annual rainfall averages about 40 inches, varying from 35 inches in the sandy tract to 45 in the damp submontane area in the north-east. Variations are consider-

able, and the amount has ranged from about 20 to nearly 60 inches.

Tradition ascribes great antiquity to SAMBHAL, but very little is known of the early history of the District. Prithwī Rāj, the last Hindu king of Delhi, is said to have fought, first with the half-mythical Saiyid Sālār, and later with Jai Chand, king of Kanauj. The first historical events are, however, in the early Muhammadan period. Sambhal became the seat of a series of governors, whose duties were largely taken up with suppressing revolts of the turbulent Katehriyās. In 1266 Ghiyās-ud-dīn Balban attacked Amroha, where he ordered a general massacre. In 1365 Fīroz Tughlak invaded Katehr, as Rohilkhand was then called, to punish a chief named Rai Kakāra, who had murdered the Musalmān governor. Rai Kakāra fled to Kumaun, whereupon the emperor plundered the country, and left Malik Khitāb as governor. Ibrāhīm, the famous Sultān of Jaunpur, conquered Sambhal in 1407, and placed his own deputy in the town; but a year later Mahmūd Tughlak, emperor of Delhi, expelled the intruder, and replaced his own officials. In 1473, under Sultān Husain, the Jaunpur dynasty once more established itself for a while in Sambhal. The emperor Sikandar Lodī recovered the District in 1498 for the Delhi throne, and resided at Sambhal for four years. Thenceforward the surrounding country remained a permanent fief of the imperial court. In the middle of the sixteenth century, Ahya Maran, governor of Sambhal, rebelled against Sultān Muhammad Adil, and defeated a force sent against him by the emperor. In the succeeding year, Rājā Mittar Sen, Katehriyā, seized Sambhal, and Ahya Maran attacked him. A fierce battle ensued at Kundarkhī, in which the Rājā sustained a crushing defeat. Under Humāyūn, Alī Kulī Khān was governor of Sambhal and repelled an incursion of the still-independent Katehriyās. In 1566 some Mirzas, descendants of Tīmūr, rebelled and seized Akbar's officers, whom they confined in the fort of Sambhal. Husain Khān marched against them, and they fled to Amroha. On his following them up to their retreat, they finally escaped across the Ganges. Shāh Jahān appointed Rustam Khān governor of Katehr; and the latter founded Morādābād about 1625, calling it after Murād Bakhsh, one of the imperial princes, who was afterwards murdered by Aurangzeb. After the death of that emperor, and subsequent decline of the central power, the Katehriyās revolted, becoming independent for a time, and the Musalmān governor removed his head-quarters to Kanauj.

On the rise of Alī Muhammad, the Rohilla chief, an attempt was made by the governor of Morādābād to crush him, but the new leader was victorious and by 1740 had acquired the whole of this District. Rohilla rule lasted till 1774, when Rohilkhand became subject to Oudh, and the District passed to the British with other territory by the cession of 1801. Very soon afterwards, in 1805, the notorious Amīr Khān, a native of Sambhal, swept through the District with a swarm of Pindāri horsemen, but was not successful in his attempt to plunder the Government treasury.

Apart from a few serious riots the District remained peaceful till 1857. News of the Meerut rising arrived on May 12 in that year, and on the 18th the Muzaffarnagar rebels were captured. Next day, however, the 29th Native Infantry mutinied, and broke open the jail; but on the 21st they united with the artillery in repelling a Rāmpur mob. On the 31st the Rāmpur cavalry, who had gone to Bulandshahr, returned; and on the succeeding day news of the Bareilly and Shāhjahānpur outbreaks arrived. On June 3 the 29th Native Infantry fired on the officials, who then abandoned the station, and reached Meerut in safety on the 5th. Ten days later, the Bareilly brigade arrived at Morādābād, and shortly afterwards marched on for Delhi, taking with them the local mutineers. At the end of June, the Nawāb of Rāmpur took charge of the District for the British; but he possessed little authority, and a rebel named Majju Khān was the real ruler of Morādābād, till the arrival of General Jones's brigade on April 25, 1858, when he was hanged. Early in May the District was occupied by Mr. (afterwards Sir S.) Cracroft Wilson, the Judge of Morādābād, with a body of troops, and order was restored.

Archaeology.

Many ancient mounds exist in the District, especially in the Bilārī *tahsīl*, but they have not been explored. AMROHA and SAMBHAL contain some fine mosques and shrines, and the former has also a few Hindu remains. Morādābād city dates only from the seventeenth century.

The people.

There are 15 towns and 2,450 villages in the District. Population is increasing steadily, though variations occur in different areas owing to the vicissitudes of the seasons. The numbers at the four enumerations were as follows: (1872) 1,122,357, (1881) 1,155,173, (1891) 1,179,398, and (1901) 1,191,993. There are six *tahsīls*—MORĀDĀBĀD, THĀKURDWĀRĀ, BILĀRĪ, SAMBHAL, AMROHA, and HASANPUR—each named from its head-quarters. The principal towns are the

municipalities of MORĀDĀBĀD, CHANDAUSĪ, AMROHA, and SAMBHAL. The chief statistics of population in 1901 are shown below:—

Tahsīl.	Area in square miles.	Number of Towns.	Number of Villages.	Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
Morādābād	313	3	298	245,369	784	+ 1·9	7,668
Thākurdwārā	240	1	261	116,814	487	− 3·6	1,605
Bilārī	333	3	387	216,340	650	− 6·7	5,003
Sambhal	469	3	466	245,886	524	+ 0·1	4,035
Amroha	383	2	508	206,564	539	+ 10·9	4,467
Hasanpur	547	3	530	161,020	294	+ 4·8	2,412
District total	2,285	15	2,450	1,191,993	521	+ 1·1	25,190

About 64 per cent. of the total are Hindus and 35 per cent. Musalmāns, the latter being a high proportion. Christians number 6,103, and Aryas 2,834. Morādābād is the headquarters of the Arya Samāj in the United Provinces. More than 99 per cent. of the population speak Western Hindī, the prevailing dialect being Hindustāni. Castes and occupations.

The most numerous Hindu caste is that of the Chamārs (leather-dressers and cultivators), who form more than 21 per cent. of the total. Other important castes are Jāts, 71,000; Rājputs, 62,000; Brāhmans, 44,000; Khāgīs (cultivators), 41,000; and Ahars (agriculturists), 37,000. Jāts are not found in considerable numbers east of this District; while Ahars and Khāgīs chiefly reside in and near it. Bishnoīs, a small caste with 1,600 members, which was originally a religious sect, are hardly found elsewhere in the United Provinces. More than one-third (153,000) of the Musalmāns are so-called Shaikhs, many of whom are descended from converts, while the Julāhās (weavers), 33,000; Barhais (carpenters), 23,000; and Telis (oil-pressers), 16,000, are also largely of Hindu origin. The Saiyids, numbering 16,000, are the most considerable of the foreign tribes. About 62 per cent. of the total population are supported by agriculture, more than 6 per cent. by personal services, nearly 5 per cent. by general labour, and 3 per cent. by weaving.

Of the 5,866 native Christians in 1901, 4,780 were Methodists. The American Methodist Church commenced work in 1859, and the American Reformed Presbyterian Church in 1894. Christian missions.

General agricultural conditions.

The Ganges *khādar* is raised in the centre and escapes ordinary floods, but the lower portions are liable to inundation and to over-saturation. This tract chiefly produces wheat, rice, and sugar-cane. Above the *khādar* is a broad sandy tract, consisting of ridges separated by level plains and minor drainage channels. The land is poor and liable to waterlogging in wet years, while crops fail in seasons of drought. Wheat, mixed with barley, and *bājra* are the chief crops. The great central plain is a fertile tract, known as Katehr, which produces wheat, *jowār*, *bājra*, rice, and sugar-cane. In the Rāmgangā *khādar* floods frequently occur, and the autumn harvest is liable to great loss; but wheat, rice, and sugar-cane are grown. Rice is the principal crop grown in the damp submontane area north-east of the Rāmgangā. In good years irrigation is hardly required. A striking feature of the cultivation is the distribution of manure in all parts of a village where sugar-cane is grown, instead of its concentration on the fields near the village site.

Chief agricultural statistics and principal crops.

The ordinary tenures of the United Provinces are found; but *zamīndāri mahāls* are more common than *pattīdāri*, and *bhaiyāchārā mahāls* are rare. A large number of separate blocks of land are found in the Amroha *tahsīl*, the owners of which have no connexion with the village communities. About half of the *mahāls* in the same *tahsīl* are revenue-free, subject to a peculiar quit-rent payable to Government. The main agricultural statistics for 1902-3[1] are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Morādābād	313	221	19	41
Thākurdwārā	240	164	14	38
Bilārī	333	279	34	21
Sambhal	469	399	25	26
Amroha	383	304	19	34
Hasanpur	547	315	16	157
Total	2,285	1,682	127	317

Wheat is the crop most largely grown, covering 599 square miles, or 35 per cent. of the total cultivated area. Rice (152 square miles), *bājra* (260), barley (160), gram (125), and *jowār* (59) are also important food-crops. The most valuable crop is, however, sugar-cane, grown on 70 square miles. Cotton,

[1] Later figures are not available, owing to settlement operations.

oilseeds, and hemp (*san*) are the remaining products of importance.

There have been no marked improvements in agricultural practice, and no increase in cultivation in recent years. The area double cropped is probably increasing, and the more valuable crops—wheat, sugar-cane, and rice—are being more largely grown. The cultivation of poppy is spreading. Advances under the Agriculturists' Loans and Land Improvements Loans Acts are rarely taken. The total amounted to only Rs. 56,000 between 1892 and 1904, and Rs. 45,000 of this sum was advanced in two unfavourable seasons. Improvements in agricultural practice.

The cattle bred in the District are of the ordinary inferior type. Something has been done to improve the breed of horses and ponies, and Government maintains one stallion and the District board six, besides three donkey stallions for mule-breeding. The sheep and goats are inferior. Cattle, horses, sheep, and goats.

Masonry wells are rarely used for irrigation, except in the south of the rich Katehr tract; but earthen wells lasting for a single harvest can be made in most parts of the District, except in the sandy tract above the Ganges *khādar*. Out of 121 square miles irrigated in 1903–4, wells supplied 89, tanks or *jhīls* 18, and rivers 14. In drier years the rivers are more largely used. Irrigation.

Kankar or nodular limestone is the only mineral product, and is used for metalling roads and for making lime. Minerals.

The chief industry in the District is sugar-refining, which is carried on in many places after native methods. Cotton cloth is woven, especially in the towns, and woollen carpets are made in a few places. Morādābād city is known for the ornamental brassware produced there, and other local industries are the pottery of Amroha and the manufacture of rough glass in the south-west of the District, where *reh* is found. Cotton-weaving is said to be declining. There are four cotton gins and presses at Chandausī, besides one steam press and several hand presses for baling hemp (*san*). Arts and manufactures.

Agricultural products form the chief exports, sugar being the most important, followed by wheat, rice and other grains, and cotton. A good deal of the trade is with Calcutta, but the old trade with Delhi has been revived by a railway extension. Salt, tobacco, metals, and piece-goods are the principal imports. The largest commercial centre after Morādābād is CHANDAUSĪ, and there are several smaller flourishing market towns. Commerce.

The main line of the Oudh and Rohilkhand Railway passes through the north-east of the District, while the south is crossed Railways and roads.

by the Bareilly-Alīgarh branch through Chandausī, whence another line runs to Morādābād city. A branch from Morādābād to Ghāziābād on the East Indian Railway traverses the north-west of the District. Another branch from Gajraula to Chāndpur in Bijnor has been surveyed, and a branch of the Rohilkhand and Kumaun Railway is being constructed from Morādābād to Rāmnagar. There are 118 miles of metalled roads and 473 miles of unmetalled roads. The cost of all but 52 miles of the former is met from Local funds, but the Public Works department has charge of all the metalled roads. Avenues of trees are maintained on 119 miles. The main route is that from Bareilly through Morādābād city to the Ganges and on to Meerut. Communications are, on the whole, not good beyond the few metalled roads.

Famine.

The District has suffered repeatedly from scarcity, but has escaped visitations of great severity. In 1803-4 distress was chiefly due to losses caused by the Marāthā invasions and the raids of the Pindāri freebooter, Amīr Khān. The second famine after cession, in 1825, was aggravated by rack-renting, and the throwing of lands out of cultivation by landholders in view of the approaching settlement. In the famine of 1837-8, Morādābād, like all Rohilkhand Districts, suffered less than the Doāb. The famine of 1860-1 was aggravated by the effects of the Mutiny. Relief works were undertaken, but this was not among the Districts where distress was most intense. Relief was again necessary in 1868-9 and in 1877-8, but the number of workers never became high. In the latest famine of 1896-7 the labouring classes were distressed, but the cultivators suffered comparatively little, and the number on relief was only about 7,000.

District staff.

The Collector is usually assisted by a member of the Indian Civil Service, and by five Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each *tahsīl.*

Civil justice and crime.

There are five District Munsifs. The District Judge, an Additional Judge, and the Sub-Judge have civil jurisdiction over the neighbouring District of Bijnor. Both Bijnor and Budaun are included in the Sessions Judgeship of Morādābād. Serious crime is heavy, and offences against public tranquillity and crimes of violence are especially common. Religious differences, both between Hindus and Musalmāns, and between the Sunni and Shiah sects of the latter, have caused serious riots from time to time. Female infanticide was formerly suspected, but no repressive measures are now necessary.

At cession in 1801 ROHILKHAND was divided into two Districts called Morādābād and Bareilly, the former including, besides its present area, the District of Bijnor, parts of Budaun, Bareilly, and the Rāmpur State. Bijnor was made a separate subdivision called Northern Morādābād in 1817, and Budaun was taken away in 1822. The early settlements were for short periods, and proprietary rights were only gradually recognized, the system being practically a farm to the highest bidder. A feature of the early settlements was the inquiry into the terms on which the very numerous revenue-free grants were held. The District was surveyed between 1831 and 1836, and the first regular settlement under Regulation IX of 1833 was carried out between 1840 and 1843. It involved a summary inquiry into rents actually paid in each village; but the 'assets' assumed as the basis of the assessment were very roughly estimated, and a good deal of reliance was placed on the reports of the *kānungos* as to the annual value of villages. The revenue assessed amounted to 11·5 lakhs, which rose to 12 lakhs during the currency of settlement owing to additions to the District area. In the Thākurdwārā *tahsīl*, which is dependent on rice cultivation, a succession of bad seasons ruined the *zamīndārs*, who had fallen into the clutches of a usurer, and from 1860 to 1863 the *tahsīl* was taken under direct management. Elsewhere the settlement worked well. The next revision was carried out between 1872 and 1880. Soils were carefully classified, either according to the estimate of their productive value formed by the Settlement officer, or according to their physical characteristics. Rates were then ascertained for application to these. In some parts of the District cash rents were paid, and these were carefully analysed and rent rates were selected, which were applied with necessary corrections to the large area of land paying rent in kind. The revenue fixed was 14·3 lakhs, amounting to half the assumed 'assets.' This has been raised by small alterations to 14·6 lakhs, which falls at an incidence of Rs. 1·3 per acre, varying from R. 0·6 to Rs. 1·8 in different parts. A new revision of settlement commenced in 1905.

Land revenue administration.

The total collections on account of land revenue, and revenue from all sources, have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue .	13,36	13,88	15,81	14,61
Total revenue .	18,14	22,09	24,48	24,17

Local self-government. There are four municipalities—MORĀDĀBĀD, AMROHA, SAMBHAL, and CHANDAUSĪ—and eleven towns are administered under Act XX of 1856. Beyond the limits of these, local affairs are managed by the District board, which in 1903–4 had an income of 1·6 lakhs and an expenditure of 1·7 lakhs. The expenditure included Rs. 92,000 on roads and buildings.

Police and jails. There are 20 police stations in the District; and the Superintendent of police has a force of 4 inspectors, 100 subordinate officers, and 480 constables. Municipal and town police number 284, and rural and road police 2,285. There is a police training-school at Morādābād city. The District jail contained a daily average of 393 prisoners in 1903.

Education. The population of Morādābād is not distinguished for its literacy, and in 1901 only 2 per cent. of the total (4 males and 0·3 females) could read and write. The number of public schools rose from 184 with 5,549 pupils in 1880–1 to 290 with 9,167 pupils in 1900–1. In 1903–4 there were 301 such institutions with 10,794 pupils, of whom 1,280 were girls, besides 293 private schools with 4,122 pupils. Five of the public schools were managed by Government, and 139 by the District and municipal boards. The total expenditure on education was Rs. 50,000, of which Rs. 40,000 was provided by Local funds and Rs. 9,000 from fees. A normal school for teachers is maintained at Morādābād city, which is also the head-quarters of an Inspector and an Inspectress of schools.

Hospitals and dispensaries. There are 13 hospitals and dispensaries, with accommodation for 116 in-patients. In 1903 the number of cases treated was 160,000, of whom 3,500 were in-patients, and 7,000 operations were performed. The expenditure amounted to Rs. 16,000, chiefly met from Local funds.

Vaccination. About 41,000 persons were vaccinated in 1903–4, representing 34 per 1,000 of population. Vaccination is compulsory only in the municipalities.

[*District Gazetteer* (1883, under revision); E. B. Alexander, *Settlement Report* (1881).]

Morādābād Tahsīl.—North-eastern *tahsīl* of Morādābād District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 41′ and 29° 8′ N. and 78° 42′ and 79° E., with an area of 313 square miles. Population increased from 240,795 in 1891 to 245,369 in 1901. There are 298 villages and three towns, including MORĀDĀBĀD CITY (population, 75,128), the District and *tahsīl* head-quarters. The demand for land revenue in 1903–4

was Rs. 2,58,000, and for cesses Rs. 47,000. The density of population, 784 persons per square mile, is the highest in the District, owing to the inclusion of the city. A large part of the *tahsīl* forms the valley of the Rāmgangā and is liable to inundation, but it is generally fertile and irrigation is easy when required. In 1902–3 the area under cultivation was 221 square miles, of which only 19 were irrigated. Wells supply about half the irrigated area, and tanks or *jhīls* and rivers the remainder in equal proportions.

Thākurdwārā Tahsīl.—Northern *tahsīl* of Morādābād District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 56′ and 29° 16′ N. and 78° 39′ and 78° 55′ E., with an area of 240 square miles. Population fell from 121,174 in 1891 to 116,814 in 1901. There are 261 villages and one town, THĀKURDWĀRĀ (population, 6,111), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 1,87,000, and for cesses Rs. 32,000. The density of population, 487 persons per square mile, is below the District average. The *tahsīl* is a submontane tract, cut up by numerous small streams, none of which is of importance. The Rāmgangā, into which they fall, flows near the western border. The staple crop is rice, but sugar-cane is also grown largely. In 1902–3 the area under cultivation was 164 square miles, of which 14 were irrigated. Wells and rivers each supply about two-fifths of the irrigated area.

Bilārī.—South-eastern *tahsīl* of Morādābād District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 22′ and 28° 48′ N. and 78° 39′ and 78° 58′ E., with an area of 333 square miles. Population fell from 231,947 in 1891 to 216,340 in 1901. There are 387 villages and three towns, the largest of which are CHANDAUSĪ (population, 25,711), and Bilārī (4,766), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 3,38,000, and for cesses Rs. 57,000. The density of population, 650 persons per square mile, is considerably above the District average. Most of the *tahsīl* is a fertile level plain, richly wooded, and requiring artificial irrigation more than any other portion of the District. The Gāngan forms part of the northern boundary, and the Aril and Sot cross the centre and southern portions. Sugar-cane is the most profitable crop, but wheat covers the largest area. In 1902–3 the area under cultivation was 279 square miles, of which 34 were irrigated, mostly from wells.

Sambhal Tahsīl.—South central *tahsīl* of Morādābād

District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 20′ and 28° 49′ N. and 78° 24′ and 78° 44′ E., with an area of 469 square miles. Population increased from 245,619 in 1891 to 245,886 in 1901. There are 466 villages and three towns: SAMBHAL (population, 39,715), the *tahsīl* head-quarters, SOLAH SARAI (10,623), and SIRSĪ (5,894). The demand for land revenue in 1903–4 was Rs. 3,55,000, and for cesses Rs. 61,000. The density of population, 524 persons per square mile, is about the District average. In the east of the *tahsīl* the soil is sandy and agriculture is precarious, but the rest consists of fertile loam, including some of the best villages in the District. The Sot or Yār-i-Wafādār drains the central portion, and smaller channels cross the south. Wheat and sugar-cane are the most important crops. In 1902–3 the area under cultivation was 399 square miles, of which 25 were irrigated, mostly from wells.

Amroha Tahsīl.—North central *tahsīl* of Morādābād District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 46′ and 29° 9′ N. and 78° 20′ and 78° 43′ E., with an area of 383 square miles. Population increased from 186,183 in 1891 to 206,564 in 1901. There are 508 villages and two towns: AMROHA (population, 40,077), the *tahsīl* head-quarters, and KĀNTH (7,092). The demand for land revenue in 1903–4 was Rs. 1,34,000, and for cesses Rs. 46,000. The density of population, 539 persons per square mile, is above the District average. In the east of the *tahsīl* is a high sandy tract, well drained, but including extensive areas of scrub jungle, while the western portion consists of open plains with hardly a bush to relieve its monotony. The Gāngan and its tributaries cross the north-east and the Sot rises in a swamp near Amroha. In 1902–3 the area under cultivation was 304 square miles, of which only 19 were irrigated, wells being the chief source of supply.

Hasanpur Tahsīl.—Western *tahsīl* of Morādābād District, United Provinces, conterminous with the *pargana* of the same name, lying along the Ganges between 28° 26′ and 29° 4′ N. and 78° 4′ and 78° 26′ E., with an area of 547 square miles. Population increased from 153,680 in 1891 to 161,020 in 1901. There are 530 villages and three towns, the largest of which are HASANPUR (population, 9,579), the *tahsīl* head-quarters, and BACHHRAON (7,452). The demand for land revenue in 1903–4 was Rs. 1,90,000, and for cesses Rs. 34,000. The density of population, 294 persons per square mile, is the lowest in the Dis-

trict. The east of the *tahsīl* consists of a high sandy tract, which suffers from either excess or deficiency of rainfall. Between this and the Ganges lies a stretch of low *khādar* land with bleak sandy wastes, reed jungle alternating with patches of rich cultivation. The Mahāwa rises in the *khādar*, while a long winding marsh marks its eastern boundary at the foot of the sandy ridge. In 1902–3 the area under cultivation was 315 square miles, of which only 16 were irrigated, chiefly from wells.

Amroha Town.—Head-quarters of the *tahsīl* of the same name in Morādābād District, United Provinces, situated in 28° 54′ N. and 78° 28′ E., on the Oudh and Rohilkhand branch line from Morādābād city to Ghāziābād on the East Indian Railway. Population (1901), 40,077. The founding of the city is attributed variously to a ruler of Hastināpur, or to a sister of Prithwī Rāj; but the first historical event connected with it is the arrival of Ghiyās-ud-dīn Balban in 1266, to put down a rebellion in Katehr. In 1304 the Mongols invaded Hindustān, but were defeated near this town by the imperial troops. Early in the fourteenth century the celebrated saint, Sharf-ud-dīn, commonly known as Shāh Wilāyat, made Amroha his head-quarters, and is claimed as ancestor by many of the Saiyids who now reside there. From about the same time the importance of the town decreased, Sambhal taking its place.

Amroha is situated on a low site, the country on each side being of some elevation. It is surrounded by a belt of fine mango groves, and a large gateway and the remains of an ancient wall give the place an air of some importance. The main streets are neat and clean, and many of the shops have handsome fronts of carved wood; but the large blank walls of the houses belonging to the Muhammadan gentry present a gloomy appearance. Besides a few Hindu remains there are more than 100 mosques, and the Jāma Masjid is one of the oldest existing buildings. It was originally a Hindu temple, converted to its present use at the end of the thirteenth century; and it contains the shrine of Shaikh Saddu, a former attendant of the mosque. Saddu is believed to have practised magic, and his shrine and that of Shāh Wilāyat are visited by crowds of Musalmāns and low-class Hindus. Amroha contains a *tahsīlī*, a *munsifī*, male and female dispensaries, and a branch of the American Methodist Mission. It has been a municipality since 1870. During the ten years ending 1901 the income and expenditure averaged Rs. 22,000. In 1903–4 the income was Rs. 32,000, chiefly from octroi (Rs. 28,000); and the expenditure was Rs. 35,000. There is a good deal of

local trade, which may be expected to increase owing to the new railway. Cloth and ornamental pottery are the chief manufactures. The high school has 82 pupils, and there are also a middle school with 176, and nine municipal schools with 610 pupils.

Bachhraon.—Town in the Hasanpur *tahsīl* of Morādābād District, United Provinces, situated in 28° 56′ N. and 78° 15′ E., 41 miles west of Morādābād city. Population (1901), 7,452. According to tradition, it was founded in the time of Prithwī Rāj. The town contains several mosques and a temple. It is administered under Act XX of 1856, with an income of about Rs. 1,300. A primary school has 78 pupils.

Chandausī.—Town in the Bilārī *tahsīl* of Morādābād District, United Provinces, situated in 28° 27′ N. and 78° 47′ E., at the junction of branches of the Oudh and Rohilkhand Railway from Morādābād and Bareilly to Alīgarh. Population (1901), 25,711. Till the middle of the nineteenth century Chandausī was a mere village, but it has now become an important trading centre, largely owing to the extension of railway communications. The town is traversed by broad well-made roads, and contains a municipal hall, a police station, a *munsifī*, and a branch of the American Methodist Mission. It has been a municipality since 1863. During the ten years ending 1901 the income and expenditure averaged Rs. 26,000. In 1903-4 the income was Rs. 33,000, chiefly from octroi (Rs. 27,000); and the expenditure was Rs. 34,000. Chandausī is an emporium for all sorts of country produce collected from the neighbourhood. Sugar is chiefly exported to the Punjab and Rājputāna, while grain goes to the dearest market. Cotton is sent to Calcutta and Cawnpore. Salt from Rājputāna and piece-goods are the chief imports. During the last few years a considerable trade has arisen in hemp (*san*), which is sent to Calcutta and Bombay. There were four cotton presses and gins, employing 161 hands in 1903, and one hemp press. A little cotton cloth is made for local use. The middle school has 191 pupils, and the municipality manages two schools and aids four others attended by 276 pupils.

Hasanpur Town.—Head-quarters of the *tahsīl* of the same name in Morādābād District, United Provinces, situated in 28° 44′ N. and 78° 17′ E., 33 miles west of Morādābād city. Population (1901), 9,579. The town derives its name from Hasan Khān, who founded it in 1634. It contains a dispensary and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income

of about Rs. 2,000. Its trade is purely local; but a small quantity of very good cloth is made. The middle school has 125 pupils.

Kānth.—Town in the Amroha *tahsīl* of Morādābād District, United Provinces, situated in 29° 3′ N. and 78° 37′ E., 17 miles north-west of Morādābād city. Population (1901), 7,092. The town contains a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 1,600. There is a small local industry in cotton cloth and sugar. The middle school has 146 pupils.

Morādābād City.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 51′ N. and 78° 46′ E., on the Delhi-Bareilly road, and on the main line of the Oudh and Rohilkhand Railway, 868 miles by rail from Calcutta and 1,087 from Bombay. Population is rising steadily. The numbers at the four enumerations were as follows: (1872) 62,417, (1881) 69,352, (1891) 72,921, and (1901) 75,128. Hindus numbered 31,141 in 1901 and Musalmāns 42,472. The city was founded by Rustam Khān, governor of Katehr under Shāh Jahān, and named after the ill-fated Murād Bakhsh, the emperor's son. From this time Morādābād takes the place of Sambhal as the seat of the local governor. Early in the eighteenth century it was for a few years ruled by Nizām-ul-Mulk, who afterwards distinguished himself as Nizām of the Deccan. A later governor of Morādābād attempted to arrest the growing power of Alī Muhammad, leader of the Rohillas, but was defeated and slain; and by 1740 Morādābād was included in the new State of ROHILKHAND. Its subsequent history is that of the District, which has already been related. In 1774 the Rohilla possessions fell into the power of Oudh and in 1801 were ceded to the British. Four years later Amīr Khān, the Pindāri leader of part of Holkar's forces, dashed through Rohilkhand, but was foiled in his attempt to plunder the Government treasury by Mr. Leycester, the Collector, who shut himself up in the courthouse, defended by two small field-pieces.

The town is built on a ridge forming the right bank of the Rāmgangā, and drains naturally into that river. The Jāma Masjid, or chief mosque, which stands high on the river bank, is a handsome building, erected in 1631 by Rustam Khān. Close by are the ruins of the fort built by the same governor. The city contains a municipal hall, a *tahsīlī*, male and female dispensaries, and a mission church. Part of the barracks of the old cantonment, which is no longer a station for troops, is used

as a police training-school, where candidates for employment as sub-inspectors and newly appointed Assistant Superintendents pass a period of probation, the school being in charge of a selected District Superintendent assisted by an inspector. A poorhouse and leper asylum were built near the railway station in 1881. Morādābād is the head-quarters of an Inspector and an Inspectress of schools, and is the central station of the American Methodist and Reformed Presbyterian Missions in the District.

The municipality was constituted in 1863. During the ten years ending 1901 the income averaged Rs. 66,000 and the expenditure Rs. 64,000. In 1903–4 the income was 1·1 lakhs, chiefly derived from octroi (Rs. 81,000) and municipal property (Rs. 25,000). The expenditure was 1·2 lakhs, including conservancy (Rs. 29,000), public safety (Rs. 22,000), and administration (Rs. 11,000).

The trade largely consists of sugar, wheat, and, in good years, rice, which are exported by rail. The recent extension of direct railway communication with Delhi, which has long been one of the important markets for the produce of Rohilkhand, has favoured commerce. The principal manufacture of the town is brassware, some of which is highly ornamental. Formerly brass articles were plated with tin and patterns were then engraved, so that the pattern showed the brass ground. In place of tin a coating of lac is now generally used, the lac being coloured black, blue, or red. Cotton is also woven, and some calico-printing is done; but both the brass and cotton industries are declining in prosperity. The municipality manages three schools and aids twelve others with 1,438 pupils. The District school has 274 boys, and the Arya Samāj, the Muhammadan Association, and a private school educate about 450 more. A normal school for training teachers is also maintained here. There are twenty-three printing presses, about half of which issue newspapers, but none is important.

Sambhal Town.—Head-quarters of the *tahsīl* of the same name in Morādābād District, United Provinces, situated in 28° 35′ N. and 78° 34′ E., 23 miles south-west of Morādābād city by a metalled road. Population (1901), 39,715. The town is believed by the Hindus to have existed in the three epochs (*yuga*) preceding the present or Kali Yuga, at the end of which the tenth incarnation of Vishnu will appear in Sambhal. Many ancient mounds exist in the neighbourhood, but have not been explored. Tradition relates that Prithwī Rāj of Delhi finally defeated Jai Chand of Kanauj close to Sambhal,

and an earlier battle is said to have taken place between the Rājā of Delhi and Saiyid Sālār. Kutb-ud-dīn Aibak reduced the neighbourhood for a time; but the turbulent Katehriyās repeatedly engaged the attention of the early Muhammadan kings, who posted a governor here. In 1346 the governor revolted, but was speedily crushed. Fīroz Shāh III appointed an Afghān to Sambhal in 1380, with orders to invade Katehr every year and ravage the whole country till Khargū, the Hindu chief, who had murdered some Saiyids, was given up. In the fifteenth century Sambhal was the subject of contest between the sovereigns of Delhi and the kings of Jaunpur, and on the fall of the latter Sikandar Lodī held his court here for some years. Bābar appointed his son, Humāyūn, to be governor of the place, and is said to have visited it himself. Under Akbar Sambhal was the head-quarters of a *sarkār*, but in the reign of Shāh Jahān its importance began to wane and Morādābād took its place. In the eighteenth century Sambhal was chiefly celebrated as the birthplace of the Pindāri, Amīr Khān, who raided Rohilkhand in 1805 and afterwards founded the State of TONK.

The town site is scattered over a considerable area, and contains a mound marking the ruins of the old fort. No building stands on this except a mosque, claimed by the Hindus as a Vaishnava temple, but in reality a specimen of early Pathān architecture in which Hindu materials were probably used. The mosque contains an inscription recording that it was raised by Bābar; but doubts have been cast on the authenticity of this. There are many Hindu temples and sacred spots in the neighbourhood. The town contains a *tahsīlī*, a *munsifī*, a dispensary, and a branch of the American Methodist Mission. It has been a municipality since 1871. During the ten years ending 1901 the income and expenditure averaged Rs. 21,000. The income in 1903–4 was Rs. 30,000, chiefly from octroi (Rs. 23,000); and the expenditure was Rs. 29,000. Refined sugar is the chief article of manufacture and of trade, but other places nearer the railway have drawn away part of its former commerce. Wheat and other grain and *ghī* are also exported, and there is some trade in hides. Combs of buffalo horn are manufactured. The *tahsīlī* school has 142 pupils, and the municipality manages two schools and aids seven others with 349 pupils.

Sirsī.—Town in the Sambhal *tahsīl* of Morādābād District, United Provinces, situated in 28° 38′ N. and 78° 39′ E., 16 miles south-west of Morādābād city. Population (1901), 5,894. It is administered under Act XX of 1856, with an income of

about Rs. 1,100. There is a small industry of cotton-weaving. The primary school has 105 pupils.

Solah Sarai ('sixteen inns').—The suburbs of the town of SAMBHAL, in Morādābād District, United Provinces, are not included in the municipality of that name, but are administered separately under Act XX of 1856. They form a scattered area, with a population (1901) of 10,623; and a sum of about Rs. 1,000 is raised annually and expended on watch and ward and on conservancy.

Thākurdwārā Town.—Head-quarters of the *tahsīl* of the same name, in Morādābād District, United Provinces, situated in 29° 12′ N. and 78° 52′ E., 27 miles north of Morādābād city. Population (1901), 6,111. The town was founded in the reign of Muhammad Shāh (1719–48), and was plundered by the Pindāri, Amīr Khān, in 1805. It contains a *tahsīli*, a police station, a dispensary, and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 1,300. The *tahsīli* school has 83 pupils.

Boundaries, configuration, and river system.

Shāhjahānpur District.—Southern District of the Bareilly Division, United Provinces, lying between 27° 35′ and 28° 29′ N. and 79° 20′ and 80° 23′ E., with an area of 1,727 square miles. It is bounded on the north by Bareilly and Pīlībhīt; on the east by Kherī; on the south by Hardoī and Farrukhābād; and on the west by Budaun. The District consists of a narrow alluvial tract, running north-east from the river Ganges towards the Himālayas. It is crossed nearly at right angles by the river system of South Rohilkhand, and its natural features thus depend almost entirely upon the various streams which have cut deep channels through the alluvial soil of the Gangetic basin. The principal rivers are the RĀMGANGĀ, the Deohā or Garrā, and the GUMTĪ. Near the Ganges is a stretch of wild *khādar*, from which an area of stiff clay, drained by the Sot or Yār-i-Wafādār, reaches to the Rāmgangā. The channel of the latter river shifts from side to side of a broad valley to an extraordinary extent. Between the Rāmgangā and the Garrā lies an extensive tract of sandy soil, which changes east of the Garai to clay and then to a fertile loam extending north-east of the Garrā. The loam tract is crossed by the Khanaut, a tributary of the Garrā, beyond which another sandy area is found, gradually changing to a forest tract on the border of the damp sub-Himālayan Districts.

Geology.

Shāhjahānpur is situated entirely in the Gangetic alluvium, and *kankar* or nodular limestone is the only stone found in it.

The District is fairly well wooded, and contains nearly 50 square miles of groves. Mango, bamboo, *babūl* (*Acacia arabica*), *shīsham* (*Dalbergia Sissoo*), *tūn* (*Cedrela Toona*), and, in the north, *sāl* (*Shorea robusta*), are the chief timber trees. Botany.

Leopards are sometimes seen in the jungles in the north of the District, and the tiger and lynx have been shot there, but not recently. Spotted deer frequent the same tract, and *nīlgai* and wild hog are common everywhere, especially near the rivers. Antelope are found near the Gumtī and Ganges. Hares, partridges, quail, sand-grouse, and peafowl are included in the smaller game, while the large ponds and marshes abound in the cold season with geese, duck, and teal. Fauna.

The climate is moister than in the Doāb, though drier than in the more northern Districts of Rohilkhand. The central portion is healthy; but in the north bad fever and ague are prevalent, and in the south the neighbourhood of the Sot is also unhealthy. Climate and temperature.

The annual rainfall averages about 37 inches, varying from 33 in the south-west of the District to 40 inches at Shāhjahānpur city. In 1895-6 the fall was only 23 inches, and in 1893-4 as much as 57 inches. Rainfall.

In ancient times this District must have been included in the kingdom of PANCHĀLA, and during the early Muhammadan period it formed part of the tract known as Katehr. Shāhjahānpur city was founded in the reign of Shāh Jahān by Nawāb Bahādur Khān, who named it in honour of the emperor. Early in the eighteenth century part of the south of the District was included in the territory of Muhammad Khān, Nawāb of Farrukhābād, but the central portions were acquired by Alī Muhammad, the Rohilla chief. On the east the Katehriyās retained their independence, and the land held by them formed a debatable ground between OUDH and ROHILKHAND. In 1774, after the defeat of the Rohillas by the allied forces of Oudh and the British, the two Provinces became united; and in 1801 this District, with other territory, was ceded to the British. History.

Thenceforward order was never seriously disturbed until the Mutiny, although the District bordered upon the most turbulent part of Oudh. In 1857, however, Shāhjahānpur became the scene of open rebellion. The news of the Meerut outbreak arrived on May 15; but all remained quiet till the 25th, when the sepoys informed their officers that the mob intended to plunder the treasury. Precautions were taken against such an attempt; but on the 31st, while most of the officers, civil

and military, were at church, some of the sepoys forced their way into the building and attacked them. Three Europeans were shot down at once; the remainder were joined by the other officers, and the whole party escaped first to Pawāyān, and afterwards to Muhamdī in Kherī District. The mutineers burnt the station, plundered the treasury, and made their way to the centre of local disaffection at Bareilly. A rebel government under Kādir Alī Khān was proclaimed on June 1. On the 18th Ghulām Kādir Khān, the hereditary Nawāb of Shāhjahānpur, passed through on his way to Bareilly, where he was appointed Nāzim of Shāhjahānpur by Khān Bahādur Khān. On the 23rd the Nawāb returned to his titular post, and superseded Kādir Alī. He remained in power from June, 1857, till January, 1858, when British troops reoccupied Fatehgarh. The Nawāb of Fatehgarh and Fīroz Shāh then hastened to Shāhjahānpur and on to Bareilly. After the fall of Lucknow, the Nāna Sāhib also fled through Shāhjahānpur to Bareilly. In January the Nawāb put to death Hāmid Hasan Khān, Deputy-Collector, and Muhammad Hasan, Subordinate Judge, for corresponding with the British. On April 30, 1858, the British force, under Lord Clyde, reached Shāhjahānpur. The rebels fled to Muhamdī and Lord Clyde went on to Bareilly on May 2, leaving only a small detachment to guard the station. The rebels then assembled once more, and besieged the detachment for nine days; but Brigadier Jones's column relieved them on the 12th, and authority was then finally re-established.

Archaeology. The District contains a few ancient sites which have not been explored, Golā and Mātī in the Pawāyān *tahsīl* being the largest. A copperplate grant by Harsha of Kanauj, dated A.D. 628, was found at Bānskhera[1]. There are no Muhammadan buildings of importance.

The people. The District contains 6 towns and 2,034 villages. The population has fluctuated during the last thirty years. The numbers at the four enumerations were as follows: (1872) 951,006, (1881) 856,946, (1891) 918,551, and (1901) 921,535. Between 1872 and 1881 the District suffered severely in the famine of 1877-8 and the fever epidemic of 1879. There are four *tahsīls*—SHĀHJAHĀNPUR, JALĀLĀBĀD, TILHAR, and PAWĀYĀN—each of which is named after its head-quarters. The principal towns are the municipalities of SHĀHJAHĀNPUR CITY, the District head-quarters, and TILHAR. The table on the next page gives the chief statistics of population in 1901.

[1] *Epigraphia Indica*, vol. iv, p. 208.

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Shāhjahānpur .	394	1	463	265,467	674	− 2.8	9,672
Jalālābād . .	324	1	360	175,674	542	+ 10.6	3,340
Tilhar . .	418	3	558	257,035	615	+ 8.3	4,924
Pawāyān . .	591	1	653	223,359	378	− 10.4	5,189
District total	1,727	6	2,034	921,535	534	+ 0.3	23,125

About 85 per cent. of the total are Hindus and more than 14 per cent. Musalmāns. The Arya Samāj, though its members number only 1,646, is increasing in importance. More than 99 per cent. of the people speak Western Hindī, the prevailing dialect being Kanaujiā.

Castes and occupations. Chamārs (leather-dressers and cultivators), 98,000, are the most numerous Hindu caste. The other large castes are Kisāns (cultivators), 79,000; Ahīrs (graziers and cultivators), 71,000; Rājputs, 68,000; Brāhmans, 61,000; Kahārs (fishermen and cultivators), 40,000; Kāchhīs (cultivators), 34,000; Muraos (market-gardeners), 31,000; and Kurmīs (agriculturists), 27,000. Among Musalmāns, Pathāns number 41,000, followed by Shaikhs, 24,000, and Julāhās (weavers), 18,000. The proportion of the population supported by agriculture is 69 per cent.—a high figure. Personal services support 5 per cent., general labour 4 per cent., and cotton-weaving 2 per cent. Rājputs and Brāhmans are the chief holders of land; and Rājputs, Kāchhīs, Muraos, Ahīrs, and Chamārs are the principal cultivators.

Christian missions. Out of 1,739 native Christians in 1901, 1,495 were Methodists. The American Methodist Mission opened work in the District in 1859, and has seven stations, besides two in Oudh.

General agricultural conditions. Agricultural conditions are exceedingly complex, owing to the varied character of the soil and of the facilities for irrigation. The Ganges *khādar* is either sand or light loam, and suffers from drought, though it is also liable to disastrous floods. The clay tract adjoining it produces rice in the autumn, and requires constant irrigation for wheat and poppy, the principal spring crops. This is the only part of the District where sugar-cane is not grown. Along the Rāmgangā irrigation is easy, but the autumn crops are liable to great damage from flooding. East of this river the sandy tract produces *bājra* and wheat of medium quality. Another clay tract is found between the Garai and the Garrā, which is liable to suffer in dry years.

The most fertile tract is the loam area in the centre of the District, which produces much sugar-cane and other valuable crops. North-east of this the soil deteriorates and becomes sandy; there is a good deal of jungle, and wild animals damage the crops, while the drinking-water is bad in places. Some better land is found in the extreme north-east, but its value depends largely on its distance from the forests on the border, and on its immunity from wild beasts.

Chief agricultural statistics and principal crops.

The ordinary tenures of the United Provinces are found. *Zamīndāri mahāls* include 56 per cent. of the total area, and *pattīdāri mahāls* 44 per cent. The main agricultural statistics for 1903-4 are shown below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Shāhjahānpur	394	292	84	44
Jalālābād	324	225	65	50
Tilhar	418	330	84	26
Pawāyān	591	360	114	146
Total	1,727	1,207	347	266

The chief food-crops, with the area under each in square miles in 1903-4, are: wheat (444), rice (106), gram (159), and *bājra* (173). Sugar-cane covered 56 square miles, and poppy 27. Of the uncultivated area, about 52 miles are occupied by the forests in the north-east of the District, and an equal amount by swamps and sandy tracts near the Gumtī.

Improvements in agricultural practice.

There have been no improvements in the means of irrigation, and no expansion of cultivation in recent years. On the other hand, a rise is noticeable in the area bearing a double crop, and the valuable crops are being more largely sown. Thus rice has taken the place of *bājra* and *jowār*, and the area under poppy and sugar-cane has increased. Considerable advances were made under the Agriculturists' Loans Act during the ten years ending 1900, amounting to 1·6 lakhs, but a quarter of this was lent in the famine year 1896-7. Only small sums have been advanced in later years, and the loans granted under the Land Improvement Act have been insignificant, except in 1896-7.

Cattle, horses, sheep, and goats.

In the north of the District the *bāngar* breed of cattle is found, the bullocks being hardy and quick-moving. In 1866 and 1867 attempts were made to introduce a better strain near Shāhjahānpur; but the climate did not suit the animals imported. The ordinary breed of horses is also poor; stallions have been kept by Government for some years, and two are now at stud. The sheep and goats are small and inferior.

In 1903-4, out of 347 square miles irrigated, wells supplied 207 square miles, tanks or *jhīls* 86, and other sources 54. The spring-level is high, and in ordinary years irrigation is not required for many crops, or can be supplied easily by temporary wells lasting for a single harvest. In two tracts a deficiency of water is experienced in dry years. The sandy area along the Gumtī is unprotected, while the clay tract in the south of the District depends on the numerous small channels which intersect it, and which are dammed at the end of the rains, to supply water for the spring harvest. Irrigation.

There are no 'reserved' or 'protected' forests the property of Government; but in the north-east of the District are some tracts of unreclaimed forest, chiefly *sāl*, which, with a few exceptions, do not now contain any large timber, but supply poles for use in house-building. Their total area is about 52 square miles. Forests.

Kankar or nodular limestone is the only mineral product, and is used for metalling roads and for burning into lime. Minerals.

Sugar-refining is by far the most important industry in the District. Indigo was once manufactured, but has now become a minor product. The matting made from a jungle grass called *baib* is largely exported. Coarse cotton cloth, chintz, and brass vessels are made in various places for local use, and there are small manufactures of ironware inlaid with gold and silver, and of lacquered goods. The Rosa sugar and rum factory near Shāhjahānpur is one of the largest in India, and employed 632 hands in 1903. Arts and manufactures.

The grain trade is of ordinary dimensions, and sugar is the principal article of export, the Shāhjahānpur production being celebrated throughout India. It is largely exported to Rājputāna and the Punjab. There is also a considerable trade in oilseeds at Tilhar. European goods, metals, and salt are the principal imports. Forest produce is floated down the rivers from Pīlībhīt; but the spread of railways has largely decreased the river traffic, which was formerly important. Tilhar and Shāhjahānpur are the chief trade centres, though markets are held at many smaller places. Commerce.

The Oudh and Rohilkhand main line crosses the centre of the District and is the chief trade route; but a little traffic is carried by the Lucknow-Sītāpur-Bareilly State Railway, which traverses the north-east corner. The two lines are connected by a steam tramway or light railway, 40 miles long, from Shāhjahānpur city to Mailānī in Kherī District. The District is well supplied with roads, except in the tract south-west of the Ram- Railways and roads.

gangā. Of these 118 miles are metalled, and are maintained by the Public Works department, but the cost of 46 miles is charged to Local funds. The remaining 326 miles are unmetalled. Avenues of trees are maintained on 222 miles. The principal routes comprise the branch of the grand trunk road from Fatehgarh which divides at Jalālābād, one line going to Bareilly and one to Shāhjahānpur city; the road from Bareilly through Tilhar and Shāhjahānpur to Sītāpur and Lucknow; and the road from Shāhjahānpur through the north of the District.

Famine. In a large part of the District the effects of drought can be mitigated as long as the cultivators are able to make temporary wells; but elsewhere a failure of the rains is disastrous, and Shāhjahānpur has suffered severely. The great famine of 1783-4 did not press so heavily here as in the tracts south of the Ganges. In 1803-4, two years after cession, rain completely failed for the autumn harvest. In 1825-6 drought again occurred, but hardly caused famine. The autumn rains failed in 1837-8, but a slight fall in February saved the spring harvests. The famine of 1860-1 was severely felt throughout Rohilkhand, though Shāhjahānpur escaped more lightly than the contiguous District of Budaun. In 1868-9 the period of pressure was severe, but only lasted for seven weeks. The famine of 1877-8 was the worst since the commencement of British rule. A series of bad harvests had followed the previous scarcity of 1868-9, and prices had risen owing to the demand for grain in Southern India. On August 17, 1877, the Collector reported, 'roaring hot winds, and not a vestige of green anywhere.' The autumn harvest, which provides the chief food-grains for the lower classes, was a complete failure. Rain early in October enabled the sowings for the *rabi* or spring crop to be made, and advances were given for seed. Relief works were opened in December; but the people refused to come on them, and large numbers succumbed in the cold season. The after-effects of the famine were severely felt when an epidemic of fever broke out in 1879. The registered death-rate rose from 29·37 per 1,000 in 1877 to 57·04 in 1878, and stood at 53·59 in 1879. In 1895 the rains ceased prematurely, and distress was felt in the north of the District by May, 1896. The monsoon of 1896 closed even earlier than in 1895, and the sugar-cane and rice were seriously damaged, besides the ordinary food-crops. Great use was made of river water, so that a fair spring harvest was secured, and the relief works opened were not resorted to by any large number.

The Collector is usually assisted by a member of the Indian Civil Service, and by four Deputy-Collectors recruited in India. A *tahsīldār* is stationed at the head-quarters of each *tahsīl*. Two officers of the Opium department are posted to this District. District staff.

There are three regular District Munsifs, and a scheme for village Munsifs was introduced in 1894. The District Judge and Sub-Judge exercise civil jurisdiction over the neighbouring District of Budaun; but the former hears sessions cases from Shāhjahānpur alone. Crime is heavy, the more serious forms of offences against life and limb, and robbery and dacoity, being common. Female infanticide was formerly suspected; but in 1904 only 154 persons remained under surveillance. Civil justice and crime.

At cession in 1801 the present area formed part of Bareilly; but a separate District of Shāhjahānpur was constituted in 1813-4. Early settlements were for short periods, being based as usual on the previous collections coupled with a system of competition. The first regular settlement under Regulation IX of 1833 was carried out in 1838-9. The District had been over-assessed, and considerable reductions, amounting to about 12 per cent., were made, the demand being fixed at 9·8 lakhs. Villages were grouped according to their capabilities of soil and irrigation, and revenue rates fixed per acre of cultivation. Another revision took place thirty years later, and the new settlement was based on rates selected from the rents actually paid, with some regard to prospective increases. The result was an assessment of 11·8 lakhs, which was subsequently reduced by Rs. 18,000. The latest revision was made between 1896 and 1900. In this settlement prospective increases in the rental value of villages were altogether disregarded, except where the rents were found to be totally inadequate. About four-fifths of the area assessed was held by tenants, cash rents being paid in the greater part. The assessment amounted to 11·7 lakhs, or 48·6 per cent. of the accepted 'assets,' and the operations chiefly resulted in a redistribution of the demand. The incidence per acre is Rs. 1·2, varying from R. 0·5 in the north of the District to Rs. 1·7 in the fertile central tract. Land revenue administration.

The total collections on account of land revenue, and revenue from all sources, have been, in thousands of rupees:—

	1880-1.	1890-1.	1900-1.	1903-4.
Land revenue . .	11,20	11,09	13,91	11,53
Total revenue . .	16,87	19,92	25,80	26,01

Local self-government.

There are two municipalities, SHĀHJAHĀNPUR and TILHAR, and four towns are administered under Act XX of 1856. Beyond the limits of these places local affairs are managed by the District board, which has an income and expenditure of more than a lakh. In 1903-4 the expenditure on roads and buildings amounted to Rs. 46,000.

Police and jails.

The District Superintendent of police commands a force of 3 inspectors, 89 subordinate officers, and 365 constables, besides 302 municipal and town police, and 2,097 rural and road police. There are 19 police stations. The District jail contained a daily average of 316 prisoners in 1903.

Education.

The population of Shāhjahānpur is not conspicuous for literacy, and in 1901 only 2·6 per cent. (4 males and 0·3 females) could read and write. The number of public schools, however, increased from 149 in 1880-1 to 184 in 1900-1, and the number of pupils from 4,324 to 8,796. In 1903-4 there were 186 public schools with 8,744 pupils, of whom 514 were girls, and 60 private schools with 667 pupils. Four of the public schools are managed by Government and 124 by the District and municipal boards. Out of a total expenditure on education of Rs. 52,900, Local funds provided Rs. 41,000 and fees Rs. 10,000.

Hospitals and dispensaries.

The District possesses 11 hospitals and dispensaries, with accommodation for 130 in-patients. About 85,000 cases were treated in 1903, of whom 1,400 were in-patients, and 3,000 operations were performed. The total expenditure was 16,000, chiefly met from Local funds.

Vaccination.

In 1903-4, 30,000 persons were vaccinated, representing a proportion of 32 per 1,000 of population. Vaccination is compulsory only in the two municipalities.

[*District Gazetteer* (1883, under revision); W. A. W. Last, *Settlement Report* (1901).]

Shāhjahānpur Tahsīl.—Head-quarters *tahsīl* of Shāhjahānpur District, United Provinces, comprising the *parganas* of Shāhjahānpur, Jamaur, and Kānt, and lying between 27° 39′ and 28° 1′ N. and 79° 36′ and 80° 5′ E., with an area of 394 square miles. Population fell from 273,146 in 1891 to 265,467 in 1901. There are 463 villages and only one town, SHĀHJAHĀNPUR CITY (population, 76,458), the District and *tahsīl* head-quarters. The demand for land revenue in 1903-4 was Rs. 3,00,000, and for cesses Rs. 49,000. The density of population, 674 persons per square mile, is considerably above the District average, owing to the inclusion of the city. Through the centre of the *tahsīl* flows the Garrā, with a narrow belt of

rich alluvial soil on either bank, while several smaller streams act as drainage channels. The eastern portion has a good loam soil; but the centre is clay, and the western tract is sandy and liable to periods of depression. In 1903–4 the area under cultivation was 293 square miles, of which 84 were irrigated, mostly from wells.

Jalālābād Tahsīl.—South-western *tahsīl* of Shāhjahānpur District, United Provinces, conterminous with the *pargana* of the same name, lying between 27° 35′ and 27° 53′ N. and 79° 20′ and 79° 44′ E., with an area of 324 square miles. Population increased from 158,798 in 1891 to 175,674 in 1901, the rate of increase being the highest in the District. There are 360 villages and one town, JALĀLĀBĀD (population, 7,017), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,17,000, and for cesses Rs. 35,000. The density of population, 542 persons per square mile, is about the District average. Along the south western border flows the Ganges, and the Rāmgangā crosses the centre of the *tahsīl*. The Ganges *khādar* is very poor. Beyond the *khādar* a hard clay plain, called *bankatī*, extends up to the Rāmgangā alluvial tract. The *bankatī* area requires constant irrigation, which is supplied by damming numerous small streams. Near the Rāmgangā the soil is usually richer, but deposits of sand are occasionally left by the river floods. East of the Rāmgangā lies a small tract of light sandy soil, requiring irrigation. In 1903–4 the area under cultivation was 225 square miles, of which 65 were irrigated. Rivers supply more than half the irrigated area.

Tilhar Tahsīl.—North-western *tahsīl* of Shāhjahānpur District, United Provinces, comprising the *parganas* of Tilhar, Mīrānpur Katra, Nigohī, Khera Bajhera, and Jalālpur, and lying between 27° 51′ and 28° 15′ N. and 79° 27′ and 79° 56′ E., with an area of 418 square miles. Population increased from 237,385 in 1891 to 257,035 in 1901. There are 558 villages and three towns: TILHAR (population, 19,091), the *tahsīl* head-quarters, KHUDĀGANJ (6,356), and KATRA (6,209). The demand for land revenue in 1903–4 was Rs. 3,46,000, and for cesses Rs. 56,000. The density of population, 615 persons per square mile, is considerably above the District average. This is the most prosperous *tahsīl* in Shāhjahānpur. The Rāmgangā flows on or near the western border, fringed by a tract of rich alluvial soil. This is succeeded by a stretch of clay near the Bahgul river, east of which lies a sandy area. The central and eastern portions consist of a rich fertile loam, crossed by the Garrā. In 1903–4 the area under cultivation was 330 square

miles, of which 84 were irrigated. Wells supply two-thirds of the irrigated area, but the Bahgul river is also used for irrigation.

Pawāyān Tahsīl.—North-eastern *tahsīl* of Shāhjahānpur District, United Provinces, comprising the *parganas* of Pawāyān, Barāgaon, and Khutār, and lying between 27° 55′ and 28° 29′ N. and 79° 53′ and 80° 23′ E., with an area of 591 square miles. Population fell from 249,222 in 1891 to 223,359 in 1901, the decrease being the largest in the District. There are 653 villages and one town, PAWĀYĀN (population, 5,408), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 2,90,000, and for cesses Rs. 46,000. The density of population, 378 persons per square mile, is the lowest in the District. In the north lies an area of about 52 miles of forest. The Gumtī, which is here a small stream, crosses the centre of the *tahsīl*, and on either bank lies an arid stretch of sandy soil with malarious swamps in the low-lying places. The western portion is more fertile, and there is some good land between the forest and the central tract. In 1903–4 the area under cultivation was 360 square miles, of which 114 were irrigated. Wells supply three-quarters of the irrigated area, and swamps or *jhīls* most of the remainder.

Jalālābād Town.—Head-quarters of the *tahsīl* of the same name in Shāhjahānpur District, United Provinces, situated in 27° 43′ N. and 79° 40′ E., at the junction of the roads from Bareilly and Shāhjahānpur to Farrukhābād. Population (1901), 7,017. Jalālābād is an old Pathān town, said to have been founded by Jalāl-ud-dīn Fīroz Shāh. Its importance has decreased owing to its distance from the railway. The houses are chiefly built of mud, and none of the mosques and temples is of special interest. The Government offices stand on the site of an old fort, and the town also contains a dispensary and a branch of the American Methodist Mission. It is administered under Act XX of 1856, with an income of about Rs. 2,500. Trade is only local. The *tahsīlī* school has about 211 pupils.

Katra (or Mīrānpur Katra).—Town in the Tilhar *tahsīl* of Shāhjahānpur District, United Provinces, situated in 28° 2′ N. and 79° 40′ E., on the Oudh and Rohilkhand Railway. Population (1901), 6,209. The town generally is built of mud, and contains a police station, a dispensary, and a branch of the American Methodist Mission. Between this place and Fatehganj East in Bareilly District was fought the battle in which the united British and Oudh forces defeated the Rohillas under Rahmat Khān, and effected the annexation of Rohilkhand to

Oudh. Katra is administered under Act XX of 1856, with an income of about Rs. 1,500. There is a considerable export of local produce by railway. The middle school has 128 pupils.

Khudāganj.—Town in the Tilhar *tahsīl* of Shāhjahānpur District, United Provinces, situated in 28° 8′ N. and 79° 44′ E., 24 miles north-west of Shāhjahānpur city. Population (1901), 6,356. The place is said to have been founded as a market in the middle of the eighteenth century, and under British rule was the head-quarters of a *tahsīl* as late as 1850. It is administered under Act XX of 1856, with an income of about Rs. 2,000. Khudāganj is a thriving place, with a considerable trade in agricultural products. The middle school has 95 pupils.

Pawāyān Town.—Head-quarters of the *tahsīl* of the same name in Shāhjahānpur District, United Provinces, situated in 28° 4′ N. and 80° 5′ E., on the steam tramway from Shāhjahānpur city to Mailānī in Kherī District. Population (1901), 5,408. Pawāyān was founded early in the eighteenth century by a Rājā whose descendants still own a large estate in the neighbourhood. It contains a *tahsīlī*, a *munsifī*, a dispensary, and a branch of the American Methodist Mission. Pawāyān is administered under Act XX of 1856, with an income of about Rs. 1,800. The bazar is poor and straggling, but there is some trade in sugar and brass vessels. The *tahsīlī* school has 158 pupils.

Shāhjahānpur City.—Administrative head-quarters of Shāhjahānpur District and *tahsīl*, with cantonment, United Provinces, situated in 27° 53′ N. and 79° 54′ E., on the left bank of the river Deohā or Garrā, crowning the high ground just above its junction with the Khanaut, with a station on the Oudh and Rohilkhand Railway, 768 miles by rail from Calcutta and 987 from Bombay. Population has fluctuated. The numbers at the four enumerations were as follows: (1872) 72,136, (1881) 77,404, (1891) 78,522, and (1901) 76,458, of whom 73,544 resided in the municipality and 2,914 in cantonments. Hindus numbered 35,636 in 1901 and Muhammadans 40,017.

The date usually assigned to the foundation of the city is 1647, after the defeat of the Rājputs in this neighbourhood by Diler Khān and Bahādur Khān, and a mosque was built here by the latter in that year. The city has no history apart from that of the District, which has already been related. There are few buildings of any interest. The old fort was completely destroyed after the Mutiny; and the mosque referred to above and a few tombs, including that of Bahādur Khān, one of the

founders of the city, are the only memorials of the former rulers. The principal public buildings, besides the ordinary District offices, are the municipal hall, District school, and the male and female dispensaries. The American Methodist Mission has its head-quarters here, and possesses several churches and an orphanage. A new meeting-house has recently been built by the Arya Samāj. Shāhjahānpur is the head-quarters of an officer of the Opium department. The municipality was constituted in 1864. During the ten years ending 1901 the income and expenditure averaged Rs. 74,000 and Rs. 72,000 respectively. In 1903-4 the income was 1·4 lakhs, including octroi (Rs. 58,000), rents of municipal markets (Rs. 27,000), and sale of refuse (Rs. 23,000). The municipality also has Rs. 30,000 invested. The expenditure amounted to 1·3 lakhs, including conservancy (Rs. 39,000), roads and buildings (Rs. 13,000), public safety (Rs. 24,000), and administration (Rs. 18,000). Shāhjahānpur is remarkable for the excellence of its drainage and general sanitation. British troops form the usual garrison of the cantonment, and in 1901-2 Boer prisoners were encamped here. The income and expenditure of the cantonment fund in 1903-4 were Rs. 15,000 and Rs. 18,000. The trade of Shāhjahānpur is small compared with its population. Sugar is the chief article of manufacture and commerce. The Rosa (Rausar) factory, which lies two miles south of the city, is the only establishment managed by Europeans. It deals with about 10 or 12 per cent. of the sugar produced in the District, and employed 632 hands in 1903. Raw sugar was formerly purchased for refining, but cane-crushing machinery has recently been erected, to supplement the supply. Rum is also manufactured and exported to many parts of India. The District high school has 188 pupils, and the *tahsīlī* school 214, while the municipality maintains four schools and aids seventeen others, with 1,452 pupils.

Tilhar Town.—Head-quarters of the *tahsīl* of the same name in Shāhjahānpur District, United Provinces, situated in 27° 58′ N. and 79° 44′ E., on the Oudh and Rohilkhand Railway, and on the road from Shāhjahānpur city to Bareilly. Population (1901), 19,091. The town is said to have been founded in the time of Akbar, but has little history. During the Mutiny the principal Muhammadan residents joined the rebels, and their estates were confiscated. Tilhar was then a small and unimportant place; but the opening of the railway has stimulated its trade, and it is now the second town in the District, with several commodious markets belonging to the

municipality. It contains a branch of the American Methodist Mission and a dispensary. It became a municipality in 1872. During the ten years ending 1901 the income and expenditure averaged Rs. 18,000 and Rs. 15,000 respectively. In 1903-4 the income was Rs. 29,000, including octroi (Rs. 14,000) and rents (Rs. 4,000), and the expenditure was Rs. 29,000. Under native rule Tilhar was chiefly celebrated for the bows and arrows made here; and *pālkīs*, varnished boxes, and similar articles are still made. The chief trade is, however, in unrefined sugar (*gur*) and grain, the latter being a very important article of commerce. Oilseeds are also largely exported. The *tahsīlī* school has 205 pupils, and eight municipal schools have 600 pupils.

Pīlībhīt District.—North-eastern District of the Bareilly Division, United Provinces, lying between 28° 6′ and 28° 53′ N. and 79° 37′ and 80° 27′ E., with an area of 1,350 square miles. On the north it is bounded by Nainī Tāl; on the north-east and east by the State of Nepāl and Kherī District; on the south by Kherī and Shāhjahānpur; and on the west by Bareilly. Though separated only by a short distance from the outer ranges of the Himālayas, Pīlībhīt consists entirely of a level plain, containing depressions but no hills, and intersected by several streams. The largest river is the SĀRDĀ, which, after a long course through the Himālayas and across the boulder-strewn tract known as the Bhābar, becomes an ordinary river of the plains at the north-east corner of the District. It then flows south-east, sometimes dividing Pīlībhīt from Nepāl, and often giving off smaller channels. A few miles south-west of the Sārdā is an affluent called the Chaukā, which flows in what was probably an old bed of the main river. In the centre of the District a long swamp, called the Mālā, lies north and south, dividing it into two distinct portions. The eastern *tahsīl* of Pūranpur contains a large area of forest land, and is remarkable for its unhealthy climate, the poverty of its inhabitants, and the instability of cultivation. The river GUMTĪ rises in the centre of this tract, but has a badly-defined bed, consisting of a series of swamps. West of the Mālā conditions are better, and the country gradually assumes the prosperous appearance of the plains of Rohilkhand. The Khanaut, Katnā, and Deohā are the principal rivers in this tract. **Boundaries, configuration, and river system.**

The District consists almost entirely of alluvium, though the bed of the Sārdā contains gravel and small boulders. **Geology.**

The flora of the District presents no peculiarity. In the north and east a large forest area is found, consisting chiefly of **Botany.**

sāl, which gives place to the ordinary trees of the plains in the south and west.

Fauna. In the wilder parts of Pūranpur tigers and leopards are numerous, but elsewhere scarce. Wild hog and deer of various kinds are found in many parts, and do much damage to the crops. The jackal and wolf are also common. Black and grey partridge, quail, sand-grouse, jungle-fowl, peafowl, geese, ducks, and snipe are the commonest game-birds. The mahseer is found in the Sārdā, and fish are common everywhere.

Climate and temperature. Fever is endemic throughout the District, and is especially virulent in the swamps near the forests in Pūranpur. Except for fever, Pīlībhīt is fairly healthy, and its proximity to the hills causes a more even temperature and cool climate than in the Districts farther south.

Rainfall. The same cause ensures a copious rainfall, the annual amount averaging more than 49 inches. The two northern *tahsīls* receive 52 inches and Bīsalpur in the south about 44. Damage is occasionally caused both by excess and by deficiency of rain.

History. At the end of the tenth century a line of princes of the Chhinda family ruled in the north of the District; nothing is known of them but their names, recorded in an inscription found near DEWAL, and the fact that they made a canal. Local history commences with the rise of the Rohilla power in the eighteenth century, when Pīlībhīt fell into the hands of Hāfiz Rahmat Khān, the great leader of the Rohillas after the death of Alī Muhammad. He resided for a time at Pīlībhīt, which is indebted to him for its mosque and walls, some of its markets, and all that distinguished it before the advent of British rule. Rahmat Khān was killed in the battle near KATRA in 1774, fought between the Rohillas and the Nawāb of Oudh, who was aided by a British force lent by Warren Hastings. Pīlībhīt was occupied without resistance, and became part of the new dominions added to Oudh. In 1801, with the rest of Rohilkhand, it passed to the British, being ceded in lieu of the payment of tribute.

At the time of the Mutiny, in 1857, part of the present District was included in a subdivision of Bareilly. News of the rising of the troops at Bareilly reached Pīlībhīt on June 1, and tumults at once broke out among the population. The Joint Magistrate was forced to retire to Nainī Tāl; and while the surrounding villages remained a prey to the rapacity and extortions of rival *zamīndārs*, the city nominally submitted

to the authority of Khān Bahādur Khān, the rebel Nawāb of Bareilly, a grandson of Hāfiz Rahmat Khān. Order was restored in 1858, and has since then only been seriously disturbed in 1871, when a riot, which was not suppressed without bloodshed, occurred between Hindus and Muhammadans on the occasion of a Hindu festival.

Archaeology.

Besides the ruins near Dewal several extensive mounds are situated in various parts of the District, which have not been explored. Local tradition connects them with the mythical Rājā Vena.

The people.

There are five towns and 1,056 villages. Population has fluctuated considerably, owing to the unhealthy nature of a great part of the District, and the facility with which its inhabitants migrate. The numbers at the four enumerations were as follows: (1872) 492,098, (1881) 451,601, (1891) 485,108, and (1901) 470,339. The famine of 1877–8 and the fever epidemic of 1879 had serious effects on population. There are 3 *tahsīls*—BĪSALPUR, PĪLĪBHĪT, and PŪRANPUR—each named from its head-quarters. The principal towns are the municipalities of PĪLĪBHĪT and BĪSALPUR. The following table gives the chief statistics of population in 1901:—

Tahsīl.	Area in square miles.	Number of		Population.	Population per square mile.	Percentage of variation in population between 1891 and 1901.	Number of persons able to read and write.
		Towns.	Villages.				
Bīsalpur	363	2	424	196,333	541	+ 2·9	4,260
Pīlībhīt	474	3	390	184,922	390	− 7·1	5,066
Pūranpur	513	..	242	89,084	174	− 6·4	1,447
District total	1,350	5	1,056	470,339	348	− 3·0	10,773

Hindus form 82 per cent. of the total and Musalmāns more than 17 per cent. The density is below the Provincial average, owing to the large area of forest and waste in Pūranpur. Almost the entire population speak Western Hindī, Kanaujiā being the prevailing dialect.

Castes and occupations.

Among Hindus the most numerous castes are: Kisāns (cultivators), 54,000; Kurmīs (agriculturists), 47,000; Lodhas (cultivators), 35,000; Chamārs (leather-workers and labourers), 31,000; Brāhmans, 25,000; and Muraos (market-gardeners), 25,000. The chief Muhammadan tribes and castes are: Julāhās (weavers), 15,000; Pathāns, 13,000; Shaikhs, 12,000; Behnās (cotton-carders), 6,000; Banjārās (grain-carriers and agricultur-

ists), 5,000; and Rains (cultivators), 5,000. The Kisāns and Lodhas are found chiefly in the Bareilly and Agra Divisions, the Kurmīs in the centre of the Province, and the Banjārās in the submontane tracts. About 69 per cent. of the population are supported by agriculture—a high proportion; 6 per cent. by general labour, and 2 per cent. by weaving.

Christian missions.

Out of 1,283 native Christians in 1901, 1,138 were Methodists. The American Methodist Mission has worked in this District since 1861.

General agricultural conditions.

In the north-western *tahsīl* of Pīlībhīt, with its clay soil and heavy rainfall, rice forms the most important crop; wheat and gram are also grown, and the cultivation of sugar-cane has extended considerably. Pūranpur produces rice and wheat, but barley and oilseeds are grown to a larger extent than in Pīlībhīt, as the soil is lighter. In the south of the District rice is also an important crop, but sugar-cane is more valuable, and wheat and gram cover a larger area than in the north-west. The standard of cultivation varies considerably. In the south and west it will bear comparison with the best of the Rohilkhand Districts; but in the north-east and east, where the energies of the cultivator are devoted to protecting his crops from the depredations of wild beasts, tillage is slovenly and irrigation rare.

Chief agricultural statistics and principal crops.

The ordinary tenures of the United Provinces are found; but the District is remarkable for the extent to which *zamīndāri mahāls* have remained undivided, especially in the two northern *tahsīls*. Out of 1,493 *mahāls* in these only 30 are *pattīdāri*, while in the Bīsalpur *tahsīl* 617 *mahāls* are *pattīdāri* and 371 *zamīndāri*. The main agricultural statistics for 1903-4 are given below, in square miles:—

Tahsīl.	Total.	Cultivated.	Irrigated.	Cultivable waste.
Bīsalpur . . .	363	241	84	66
Pīlībhīt . . .	474	240	37	59
Pūranpur . . .	513	178	18	230
Total	1,350	659	139	355

Rice covered 186 square miles, or 28 per cent. of the net cultivated area, and wheat 194 square miles, or 29 per cent.; gram, barley, and *bājra* are the next most important food-crops. Sugar-cane was grown on 58, and oilseeds on 23 square miles. Hemp (*sān*), though it covered only 11 square miles, is increasing in importance.

Improvements in agricultural practice. There has been no permanent increase in cultivation during recent years, and fluctuations are considerable, owing to climatic reasons. A rise is, however, noticeable in the area sown with the more valuable crops, rice and sugar-cane. Wheat sown alone has been replaced by barley or by mixed crops, and there has been an increase in the area double cropped. Except in adverse seasons loans from Government are rarely taken. No advances were made from 1890 to 1894; and though Rs. 97,000 was lent during the next ten years, Rs. 53,000 of this amount was advanced in 1896-7.

Cattle, horses, sheep, and goats. The District contains large stretches of grazing-ground, especially in the Pūranpur *tahsīl*, and a special breed of cattle is found here. It is called *panwār*, and the bullocks are of average size, quick movers, and fiery tempered. Some Hānsi bulls were once imported, but were not a success. Very few ponies or horses are kept, and the sheep and goats are generally inferior.

Irrigation. There is great divergence between the different *tahsīls* in the methods of irrigation, and the need and facilities for supplying water. In 1803-4 wells supplied 64 square miles, lakes and swamps 37, rivers 19, and Government canals 19 square miles. The canals, which are situated entirely in the western part of the Pīlībhīt *tahsīl*, consist of two systems, drawn from the Bahgul and Kailās, both of which are small streams. In ordinary years irrigation is not necessary, and small temporary wells can be made wherever required, except in the sandy tracts of Pūranpur. In the Bīsalpur *tahsīl* the supply from wells is regularly supplemented by a defective and wasteful private arrangement of dams on the small streams which traverse that area, especially on the Mālā swamp. The minor rivers are similarly used in the Pīlībhīt and Pūranpur *tahsils* in seasons of drought. Water is generally raised in earthern pots suspended from a lever (*dhenklī*), as the spring-level is high.

Forests. The 'reserved' forests of Pīlībhīt District cover 149 square miles, and are included, with some forest lying in Nainī Tāl District, in the Pīlībhīt Forest division. They lie on both sides of the Mālā swamp and south-west of the Chaukā, forming an area shaped like a horseshoe. The forests are the poorest in the Province, and are chiefly valuable for the grazing they afford, and the products used by the inhabitants of the neighbourhood. *Sāl* (*Shorea robusta*) and *haldu* (*Adina cordifolia*) are the most valuable trees; but many years must elapse before timber of value is produced. About 64 miles are occupied by similar forests belonging to private persons in the

Pūranpur *tahsīl*, and 44 miles in the south of Bīsalpur are covered with jungle, chiefly *dhāk* (*Butea frondosa*).

Arts and manufactures. Sugar-refining is the most important industry. Boat-building and wood-carving were formerly carried on largely; but the carpenters have now turned their attention to cart-making. There is a small manufacture of hempen bags and metal vessels, and cotton-weaving is carried on, but chiefly for local supply. Catechu is prepared in the north of the District.

Commerce. The staple exports are wheat, sugar, and rice. In the last few years a flourishing export trade in hemp has sprung up. The finer varieties of rice grown in the rich lowlands of Nepāl are exported through this District, and there is also a considerable trade in hill produce, such as borax, pepper, and ginger. Neoriā, Bīsalpur, and Pūranpur are the principal trade centres, outside the head-quarters town.

Railways and roads. The Lucknow-Sītāpur-Bareilly metre-gauge railway passes across the centre of the District, and a branch is contemplated from Pīlībhīt town to Tanakpur, the great mart at the foot of the Kumaun hills. Pīlībhīt is very badly provided with roads, and the northern and eastern parts are almost impassable, except by elephants, during the rainy season. There are 13 miles of metalled roads from Pīlībhīt towards Bareilly, and 299 miles of unmetalled roads. The absence of *kankar* or nodular limestone is the chief cause of the want of better roads. Avenues of trees are maintained along 84 miles.

Famine. The natural moisture of the soil is generally sufficient to protect the District from the extremity of famine, and excessive rain is more to be feared than drought. In the sandy tracts in the east and south, however, where wells cannot be made, drought affects the people. Large remissions of revenue were made in 1825–6, and the famine of 1837–8 was felt. Details of later famines are not available till that of 1868–9, when Rs. 43,000 was spent on relief, and large advances were made for seed and bullocks. The famine of 1877–8 caused some distress and the revenue demand was reduced. In 1896–7 scarcity was again felt, but liberal advances were made and the District recovered rapidly.

District staff. The Collector is ordinarily assisted by two Deputy-Collectors recruited in India, and a *tahsīldār* resides at the head-quarters of each *tahsīl*. An officer of the Forest department is stationed at Pīlībhīt, while the canals are part of the Rohilkhand Canals under an officer at Bareilly.

Civil justice and crime. Pīlībhīt is included in the Civil and Sessions Judgeship of Bareilly, and there is one District Munsif. Crime is usually light.

Land revenue administration. At annexation, in 1801, Pīlībhīt was included in the large District of Bareilly. From 1833 to 1842 part of the area now forming Pīlībhīt was included with other *tahsīls* in a District called North Bareilly. A subdivision was then created, consisting of Pīlībhīt, Pūranpur, and other territory, which became a separate District in 1879. In 1880 the Baherī *tahsīl* was restored to Bareilly, and the Bīsalpur *tahsīl* added to Pīlībhīt. The early settlements were thus made as part of BAREILLY DISTRICT, to which reference may be made for the methods followed. The demand fixed at the first regular settlement under Regulation IX of 1833 on the present area was 5·9 lakhs. At the next settlement, between 1865 and 1872, the Bīsalpur *tahsīl* was treated as part of Bareilly District, and the Pīlībhīt and Pūranpur *tahsīls* were settled separately. The total revenue was raised to 7·2 lakhs; but a succession of bad years caused reductions to be made, and part of the District has since been under a system of short settlements. The Bīsalpur *tahsīl* was again settled in 1902 together with Bareilly District, the revenue being raised from 3·1 to 3·3 lakhs; but the revision of settlement in the other two *tahsīls* has been postponed for ten years. In 1902–3 the incidence of revenue was R. 1 per acre, varying from 5 annas in Pūranpur to Rs. 1·5 in Pīlībhīt.

The total collections on account of land revenue, and revenue from all sources, have been, in thousands of rupees:—

	1880–1.	1890–1.	1900–1.	1903–4.
Land revenue . .	7,18	7,01	7,29	7,11
Total revenue . .	9,24	9,81	10,52	10,74

Local self-government. There are two municipalities, PĪLĪBHĪT and BĪSALPUR, and three towns are administered under Act XX of 1856. Beyond the limits of these, local affairs are managed by the District board, which had an income of Rs. 72,000 in 1903–4, chiefly derived from rates. The expenditure was Rs. 79,000, including Rs. 40,000 on roads and buildings.

Police and jails. The District Superintendent of police has a force of 3 inspectors, 55 subordinate officers, and 221 men, distributed in 9 police stations. There are also 109 municipal and town police, and 1,066 village and road police. Up to 1902 convicts were sent to the Bareilly District jail; but a jail has now been built, which contained a daily average of 48 prisoners in 1903.

Education. Pīlībhīt occupies a medium place as regards the literacy of its population, of whom 2·3 per cent. (4 males and 0·2 females)

could read and write in 1901. The number of public schools rose from 62 with 2,124 pupils in 1880–1 to 77 with 3,066 pupils in 1900–1. In 1903–4 there were 107 public schools with 4,289 pupils, of whom 238 were girls, besides 45 private schools with 667 pupils, including 46 girls. Three of the schools were managed by Government, and 87 by the District and municipal boards. The total expenditure on education in 1903–4 was Rs. 27,000, chiefly met from Local funds.

Hospitals and dispensaries. There are 5 hospitals and dispensaries, with accommodation for 66 in-patients. About 52,000 cases were treated in 1903, of whom 777 were in-patients, and 1,100 operations were performed. The expenditure was Rs. 10,000, chiefly from Local funds.

Vaccination. In 1903–4, 21,000 persons were vaccinated, giving the high proportion of 45 per 1,000 of the population. Vaccination is compulsory only in the municipalities.

[*Settlement Report of Pīlībhīt* (1873); *Bareilly District Gazetteer* (1879, under revision); *Assessment Report, Tahsīl Bīsalpur* (1902).]

Bīsalpur Tahsīl.—Southern *tahsīl* of Pīlībhīt District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 6′ and 28° 32′ N. and 79° 42′ and 80° 2′ E., with an area of 363 square miles. Population increased from 190,864 in 1891 to 196,333 in 1901. There are 424 villages and two towns, including BĪSALPUR (population, 9,851), the *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 3,25,000, and for cesses Rs. 53,000. The density of population, 541 persons per square mile, is the highest in the District. Three considerable rivers, the Deohā, Katnā, and Khanaut, and a number of smaller streams flow from north to south, and are dammed and used for irrigation, especially the upper course of the Katnā, which passes through the Mālā swamp. In 1903–4 the area under cultivation was 241 square miles, of which 84 were irrigated, mostly from wells.

Pīlībhīt Tahsīl.—North-western *tahsīl* of Pīlībhīt District, United Provinces, comprising the *parganas* of Pīlībhīt and Jahānābād, and lying between 28° 29′ and 28° 53′ N. and 79° 37′ and 80° 3′ E., with an area of 474 square miles. Population fell from 199,039 in 1891 to 184,922 in 1901. There are 390 villages and three towns, including PĪLĪBHĪT (population, 33,490), the District and *tahsīl* head-quarters. The demand for land revenue in 1903–4 was Rs. 3,03,000, and for

cesses Rs. 50,000. The density of population, 390 persons per square mile, is considerably above the District average. The Deohā and Katnā and many smaller streams traverse the *tahsīl*, and in the west two canals from the Bahgul and Kailās irrigate a small area. A long swamp, called the Mālā, forms the eastern boundary, fringed by a *sāl* forest. In 1903-4 the area under cultivation was 240 square miles, of which 37 were irrigated. In dry years temporary wells can be made readily, and the rivers are also used.

Pūranpur Tahsīl.—North-eastern *tahsīl* of Pīlībhīt District, United Provinces, conterminous with the *pargana* of the same name, lying between 28° 21′ and 28° 50′ N. and 79° 56′ and 80° 27′ E., with an area of 513 square miles. Population fell from 95,205 in 1891 to 89,084 in 1901. There are 242 villages, but no town. The demand for land revenue in 1903-4 was Rs. 93,000, and for cesses Rs. 15,000. The density of population, 174 persons per square mile, is very low. This *tahsīl* forms one of the most backward tracts in the United Provinces. Along or near the north-eastern border the SĀRDĀ forms the Nepāl frontier, and is joined by the Chaukā, which has a channel roughly parallel to that of the Sārdā. The Mālā swamp divides Pūranpur from the Pīlībhīt *tahsīl*, and a stunted forest forms a horseshoe-shaped border round three sides of the *tahsīl*. The central portion consists of a sandy plain, which easily falls out of cultivation; and the whole area is distinguished by its unhealthiness, the poverty of its inhabitants, the scarcity of cultivators, and their readiness to migrate. Since 1883 many villages have been subject to a light assessment revised every year, or every five years, according to the instability of cultivation. In 1903-4 the area under cultivation was only 178 square miles, of which 18 were irrigated.

Bīsalpur Town.—Head-quarters of the *tahsīl* of the same name in Pīlībhīt District, United Provinces, situated in 28° 18′ N. and 79° 49′ E., 23 miles south of Pīlībhīt town. Population (1901), 9,851. It is said to have been founded by one Bīsū, Ahīr, in the reign of Shāh Jahān, and a fort was built here during the rule of the Rohillas. The town is merely an overgrown agricultural village, surrounded on all sides but the south by groves. The centre is occupied by a good market-place, where four roads meet, and brick houses are increasing in number. The chief public buildings are the municipal hall, *tahsīli*, dispensary, and school. Bīsalpur has been a municipality since 1862. During the ten years ending 1901 the

income and expenditure averaged Rs. 6,000. The income in 1903–4 was Rs. 12,000, chiefly from octroi (Rs. 7,000); and the expenditure was Rs. 10,700. Trade is largely local, and consists in the collection of sugar and grain. The municipality maintains one school and aids two others, attended by 239 pupils.

Dewal.—Village in the Bīsalpur *tahsīl* of Pīlībhīt District, United Provinces, situated in 28° 25′ N. and 79° 56′ E. It lies on the western bank of a small channel called the Khawā or Katnī, which unites the Katnā to the Khanaut river, and on the opposite bank are situated two other villages, called Deoriā and Garh Gājana. An inscription found here, dated in A.D. 992, records the building of temples by a prince named Lalla of the Chhinda line; and the neighbourhood contains several mounds covering the remains of the city of Mayūta mentioned in the inscription. The Katnī appears to have been dug as a canal by the same prince.

[*Epigraphia Indica*, vol. i, p. 75.]

Pīlībhīt Town.—Head-quarters of the District and *tahsīl* of the same name, United Provinces, situated in 28° 38′ N. and 79° 48′ E., on the Lucknow-Sītāpur-Bareilly Railway. Population (1901), 33,490. The name is derived from Periyā, the title of a Banjārā clan, and *bhīt*, a 'wall' or 'mound.' It has no history till the middle of the eighteenth century, when it became the residence of Hāfiz Rahmat Khān, the Rohilla leader. In 1763 he surrounded it with a mud wall, and six years later with a brick wall. For a time Pīlībhīt was called Hāfizābād, after the title of the great soldier. The town never rose to the importance of Bareilly; and after the defeat and death of Hāfiz Rahmat Khān in 1774 it declined under the rule of Oudh, and under the British, to whom it was ceded in 1801. At the time of the Mutiny in 1857, Pīlībhīt, though it had been the capital of a District from 1833 to 1842, was the head-quarters of a subdivision. The Joint Magistrate was compelled to retire to Nainī Tāl, and the town was the scene of constant disturbances, though nominally subject to the rebel governor of Bareilly.

Pīlībhīt is almost surrounded by water. It lies between the Deohā and Kākra, which were formerly connected by ditches still forming drainage channels, though not constantly filled. A fine mosque built by Hāfiz Rahmat Khān, in imitation of the Jāma Masjid at Delhi, is the chief ornament of the town. The public buildings include the District courts, male and female dispensaries, a clock-tower, a Sanskrit school,

and a Turkish bath. The houses are largely built of brick, and there are several good market-places lined with shops. Besides the ordinary District staff, a Forest officer resides at Pīlībhīt, and there is a branch of the American Methodist Mission. The municipality was constituted in 1865. During the ten years ending 1901 the income and expenditure averaged Rs. 46,000 and Rs. 45,000 respectively. In 1903-4 the income was Rs. 76,000, including octroi (Rs. 35,000) and rents (Rs. 22,000); and the expenditure was Rs. 71,000. A revised drainage scheme has lately been carried out. The trade of the town is largely concerned with the agricultural produce of the District, wheat, rice, sugar, and hemp forming the chief exports. In addition, Pīlībhīt is an important dépôt for the produce of Nepāl and the Himālayas. Carts and bedsteads are largely made and exported. The municipality maintains eight schools and aids four others, attended by 724 pupils.

Oxford: HORACE HART, Printer to the University



The Edinburgh Geographical Institute

J.G. Bartholomew


THE UNITED PROVINCES
Scale = 1: 4,000,000 or 63·1 Miles to an Inch
English Miles
0 20 40 60 80 100
DIVISIONS OF AGRA
1 MEERUT DIVISION
2 AGRA DIVISION
3 BAREILLY DIVISION
4 ALLAHABAD DIVISION
5 BENARES DIVISION
6 GORAKHPUR DIVISION
7 KUMAUN DIVISION
DIVISIONS OF OUDH
8 LUCKNOW DIVISION
9 FYZABAD DIVISION
Native States coloured yellow
Railways opened and in construction
Canals
78
80
82
84
30
HIMALAYA MOUNTAINS
SINGHTOD
BASHAHR
TEHRI
(GARHWAL)
DEHRA DUN
GARHWAL
ALMORA
SAHARANPUR
MUZAFFARNAGAR
BIJNOR
HUNDES
Simla
Solon
Nahan
Kalsia
Buria
Chini
Gartok
Jiachan
Totling
Tsaparang
Kailas Peaks
Tirthapuri
R. Sutlej
Manasarowar Lakes
Kardam
Mussoorie
Landour
Dehra
Tehri
Srinagar
Pauri
Badrinath
Joshimath
Trisul 21,382
Nanda Devi 25,661
Nanda Kot
Milam
Hardwar
Saharanpur
Roorkee
Deoband
Muzaffarnagar
Bijnor
Nagina
Lansdowne
Kotdwara
Ranikhet
Almora
Mukteswar
Naini Tal
Champawat
Kathgodam
Haldwani
Kashipur
Dhampur
Garbyang
Askot
Humla
Sani
Duksam
Barmalung
Tadum
Lo Mantang
Jumla
Sil Garhi
Baitari
Tuttoli
Punsum


UNITED PROVINCES
OUDH
MEERUT
MORADABAD
RAMPUR
NAINI TAL
PILIBHIT
BAREILLY
BULANDSHAHR
BUDAUN
SHAHJAHANPUR
KHERI
ALIGARH
MUTTRA
ETAH
FARRUKHABAD
MAINPURI
AGRA
ETAWAH
HARDOI
SITAPUR
BAHRAICH
GONDA
BASTI
GORAKHPUR
LUCKNOW
BARA BANKI
UNAO
CAWNPORE
RAE BARELI
SULTANPUR
FYZABAD
AZAMGARH
BALLIA
GHAZIPUR
JAUNPUR
PARTABGARH
FATEHPUR
ALLAHABAD
BENARES
MIRZAPUR
BANDA
HAMIRPUR
JALAUN
JHANSI
GWALIOR
BUNDELKHAND
BAGHELKHAND
Delhi
Meerut
Moradabad
Rampur
Bareilly
Pilibhit
Budaun
Shahjahanpur
Aligarh
Muttra
Etah
Agra
Etawah
Cawnpore
Lucknow
Unao
Rae Bareli
Sultanpur
Fyzabad
Gonda
Bahraich
Sitapur
Hardoi
Basti
Gorakhpur
Azamgarh
Ballia
Ghazipur
Jaunpur
Benares
Mirzapur
Allahabad
Partabgarh
Fatehpur
Banda
Hamirpur
Jhansi
Lalitpur
Saugor
Damoh
Rewah
Gwalior
Bharatpur
Bholpur
Sasaram
Daltonga
Dhaulagiri
Muktinath
Palpa
Sil Garhi
Dhang Ra.
Dundwa Ra.
Jumna R.
Gogra R.
Ganges R.
Son R.
Betwa R.
1
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